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ABSTRACT

Designed to assist instructors at Miami-Dade Community College in the implementation of a reading and writing across the curriculum effort, this resource book provides information and instructional materials to help in the design of writing and reading learning strategies for the classroom. The writing portion of the book begins with a statement concerning the importance of writing, and responds to a series of questions about a cross-disciplinary approach to writing instruction and students' writing skills. A discussion of writing as a thought process that facilitates learning is followed by brief descriptions of other writing across the curriculum programs in the United States. Next, short, frequent writing strategies are suggested, guidelines for selecting and working with peer tutors are provided, and special suggestions for math instructors are presented. Ways of making and responding to writing assignments are explored next, followed by a discussion of alternatives to letter grades and of graded writing assignments. The section concludes with a list of support services available to the instructor and a bibliography. The reading section begins with a question and answer introduction to reading across the curriculum, offers information about textbook readability, and explains textbook structure. Next, strategies for learning the important ideas from textbooks are suggested, such as graphic organizers, semantic mapping, and vocabulary learning techniques. The next section discusses the factors that distinguish scientific/technical reading from reading in other subjects. Suggestions for giving reading assignments are followed by test-taking guidelines. Appendices include information on word roots and affixes and a bibliography. (AYC)

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Reading & Writing
Across the Curriculum

MIAMI-DADE COMMUNITY COLLEGE

ACKNOWLEDGEMENTS

Reading and Writing Across the Curriculum is a resource book compiled by Miami-Dade Community College faculty with expertise in the field and commitment to the idea. The Reading section was written by Sandra Carter and Stephanie Layton; the Writing section by Katie MacKay. Representative faculty on all campuses reviewed the materials and offered helpful suggestions.

Financial support for this project was provided by a Special Needs grant from the Division of Institutional Development (Title III) of the U.S. Department of Education. In addition, Media Productions and Graphic Services contributed their expertise.

It is our expectation that each of the College's faculty members will not only possess this resource book but will use it as we all work together to implement the mandate to integrate the teaching of information skills in all our classes.

Suzanne L. Richter
Dean of Instruction
Wolfson Campus

ACKNOWLEDGEMENTS

My thanks to the following who offered support and suggestions for this effort:

Thelma Alishuler, Betty and Paul Conover, Mardee Jenrette, Irene Lipof, Suzanne Richter, Wayne Silver and Dick Townsend - and special thanks to Vivian Arango and Sheila Young for their typing skills.

Katie MacKay
Miami-Dade Community College
North Campus
June, 1984

FOREWORD

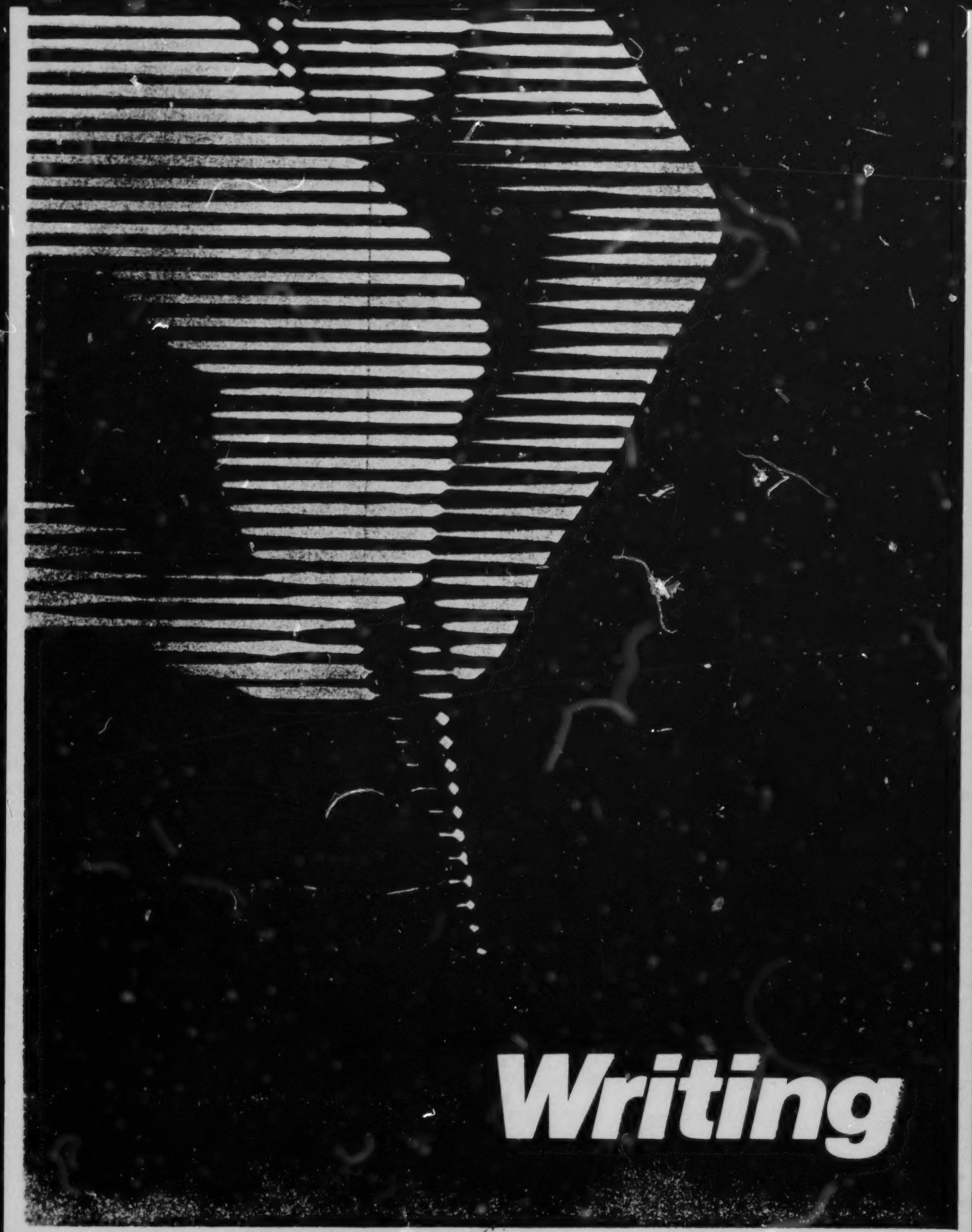
Emphasizing reading and writing is a basic ingredient in every Miami-Dade course, regardless of content. With continual practice, students are learning to polish these vital information skills.

Such an implementation of reading and writing across the curriculum, however, is difficult because most of us have not been trained to teach or evaluate either reading or writing. I hope this resource book will be helpful as you design learning strategies to support your students while they improve these skills necessary for occupational and educational success.

Your positive response to the College's efforts toward intensifying reading and writing instruction has been most gratifying. Thank you for assuming this additional responsibility.

I wish all of us every success.

Robert H. McCabe
President
Miami-Dade Community College


Writing

WRITING IS MUCH MORE THAN THE MECHANICAL EXERCISE OF COMMUNICATION SKILLS THAT CAN BE MEMORIZED. RICHARD MITCHELL, THE UNDERGROUND GRAMMARIAN OF GLASSBORO STATE COLLEGE, DEFINES THE LITERATE PERSON IN HIS BOOK LESS THAN WORDS CAN SAY, (BOSTON, TORONTO: LITTLE BROWN & CO. 1979) AS:

> He can formulate sentences that make sense. He can choose the right word from an array of similar words. He can devise the structures that show how things and statements about things are related to one another. He can generate strings of sentences that develop logically related thoughts, and arrange them in such a way as to make that logic clear to others. He can, in writing, discover thought and make knowledge.
> Because he can do these things, he can in reading, determine whether or not someone else can do these things. He is familiar with a technology of thinking. To accept anything less as our definition of literacy is to admit that hardly any of us will ever be able to think about anything. That may be true, but to admit it is to ensure it.

The federal Government, the State Government and the Administration at Miami-Dade Community College have given the improvement of information skills top priority. Can we, as concerned educators, do less?

QUESTIONS AND ANSWERS

Q. 1. Doesn't the responsibility to teach students to write belong to the English faculty?

A. 1. Certainly the English faculty are responsible for increasing language skills for all students and for teaching techniques of revision, invention, research. Other faculty across the curriculum also have a responsibility to urge their students to increase their skills in writing while they are learning and respecting the power and importance of articulating what they know. Students should perceive writing not only as a necessary skill but the best way of exploring and perfecting their thoughts.

If we can agree with Britton and others who have contributed to the research of writing that (1) writing promotes learning, (2) writing is a complex developmental process, and (3) the universe of discourse includes a broad range of writing functions and audiences, then we can assume that language for learning differs from language for informing. Writing is critical to idea formation and allows students to articulate what they have learned in any discipline and to make connections between their existing experiences and new information.

Q. 2. I give essay tests. Isn't that enough?

A. 2. When we use writing exclusively to test students or to solicit information, we imply that students are little more than memory banks who can parrot our information or that writing is something we do only <u>after</u> we have learned. We are suggesting a shift in consciousness from <u>product</u> to <u>process</u>. Essay exams are certainly a valid way of assessing whether or not a student is learning the

subject. We are only asking you to expect more frequent and personal written explorations of the subject by your students.

Q. 3. I have a great deal of content to cover in a short time. How am I supposed to find time to assign writing and, even worse, read and correct it?

A. 3. Please read the suggested short writing assignments listed elsewhere in this manual. There you will find some possible ways to solve the problem that many faculty members are facing... time to teach your own subject matter and time to assign writing particularly in the large class load that we are all required to bear. If, as suggested above, you can shift the emphasis from product to process and if you can accept the value of frequent writing to learn, perhaps the problem will solve itself. Many strategies are explained in this manual which offer ways of dealing with your problem. We also suggest a helpful publication, How to Handle the Paper Load, by Gene Stanford and the Committee on Classroom Practices, 1979-80 (Urbana, III: National Council of Teachers of English 1979).

Q. 4. I have always assigned a research paper, due at the end of the term. Why can't this take care of the required writing in my class?

A. 4. The research paper or investigative report is a traditional part of most college courses. Although it is a valid assignment, we see some problems with it unless it is handled on a step-by-step process basis. We wonder how many professors have been buried under hundreds of 2000 word, often plagiarized, end-of-term papers, never to be heard of again. And -- have the students learned anything to help them understand the research process or the content of the course? Another very important consideration is that students who have not

completed ENC 1102, the second semester English class, have not been taught research skills. You may have students in your core course who are enrolled in developmental English and certainly you will have many who have not completed ENC 1102. We are suggesting that short, frequent writing assignments will solve both of these problems. A student can learn and a teacher can evaluate as well from four paragraphs as from twenty.

Q. 5. I'm not an English teacher, but I can recognize bad writing. How can I tolerate misspelled words, sentence fragments, punctuation errors? Shouldn't I mark all these errors?

A. 5. We are not suggesting that you help to perpetuate sloppy language use. We do urge you to examine the possibility of shifting your direction from editor to reader. Your role might differ from that of the English teacher who corrects writing to that of a coach who leads students towards inquiry. You can provide direction for students to make an active effort to state relationships and to search for connections. Students whose errors are interfering with the communication process should be referred to the support services described later in this manual.

Q. 6. Why all the fuss about writing skills? Do modern citizens need to do much writing?

A. 6. We like the answer given to this question by C.F. Enke, a Michigan State chemist in "Scientific Writing: One Scientist's Perspective," English Journal 67 (Apr. 1978), 40:

> It is difficult to overemphasize the importance of writing in the professional life of a scientist. The amount of time my colleagues and I spend writing is out of all proportion to the fraction of our training devoted to developing writing skills. "Publish or perish" is a cliche, but it carries the unmistakable implication that experimental work and elegant theories have no

peer value until they have been put in writing. I was shocked to find that the time and effort of writing was often equal to that of the research work being described...the tasks of writing fall heavily on industrial scientists as well.

Q. 7. What kind of writing skill can I reasonably expect from entering students in my core course?

A. 7. The charts following this section show us the C.G.P. (Comparative Guidance & Placement) scores in written English for entering Miami-Dade freshmen Fall Term, 1983. Although students scoring below 22 are recommended for developmental English courses, they are not prevented from taking core courses. As you can see, these students number 47% of our college-wide population. If we check ethnic categories, the picture becomes grim for our Black Non-Hispanic and Hispanic students. It becomes obvious that improving the written expression of our students is the obligation of every faculty member.

Specifically, a score in the range of 20-25 means that the student has difficulty responding to a subject in clear, coherent writing. This student has little or no knowledge of the basic organization of a composition including a clearly stated thought with supporting evidence to expand the idea. In addition to lacking this knowledge, these students exhibit errors in basic usage, grammar, and spelling that interfere with communication

We are suggesting in this manual strategies to help you help students without placing an additional burden on you. We hope that the above information will serve to emphasize the futility of one lengthy research assignment for students who are having difficulty composing paragraphs.

South Campus, Mitchell Wolfson New World Center Campus, and North Campus have produced manuals with more specific assignments. We urge you to order one from your Campus SPD office, if you do not have one. We also urge you to share any strategies that have worked well for you with other faculty members.

Table 2

Miami-Dade Community College
Comparative Guidance & Placement
Test Scores for Basic Skills Assessment by Campus
First-Time-in-College Students, Opening Term 83-1

WRITTEN ENGLISH EXPRESSION TEST

	Percent of Students at or Below a Given Score					
	Campus					
Score	North	South	New World Center	Medical Center	College-Wide	National Norms
1	0	0	0	0	0	1
2	0	0	0	0	0	1
3	0	0	0	0	0	1
4	0	0	0	0	0	1
5	0	0	0	0	0	1
6	1	0	1	0	0	1
7	1	1	1	2	1	1
8	2	1	2	3	1	1
9	3	1	2	4	2	1
10	4	2	4	7	3	1
11	6	3	6	8	4	2
12	8	4	8	12	6	4
13	12	6	11	14	8	5
14	16	7	15	19	11	7
15	20	9	20	22	14	9
16	24	12	24	28	17	12
17	29	15	28	35	21	15
18	35	19	35	43	26	18
19	41	23	40	48	31	21
20	46	28	45	53	36	25
21	53	33	49	57	41	30
*22	59	38	55	64	47	35
23	64	45	62	69	53	40
24	69	52	67	73	59	45
25	74	57	71	78	64	50
26	79	63	75	81	69	56
27	83	69	80	84	74	61
28	86	74	82	87	79	66
29	90	79	87	90	84	71
30	93	84	90	92	87	76
31	95	88	93	95	91	81
32	97	91	96	97	93	85
33	98	94	96	98	95	89
34	99	96	98	99	97	92
35	99	98	99	99	98	95
36	100	99	100	100	99	97
37	100	100	100	100	100	98
38	100	100	100	100	100	99
39	100	100	100	100	100	99
40	100	100	100	100	100	99
Mean	21.1	24.1	21.6	20.4	22.9	
Median	21	24	22	20	23	
Mode	21	24	23	18	24	
Total # of Students	1,572	3,177	584	184	5,517	

*Placement Score: Students scoring below this point were recommended for developmental coursework

National Norms based on a random sample of 30,912 students who took the CGP battery at 90 colleges during the 1976-77 and 1977-78 school year.

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Table 5

Miami-Dade Community College
Comparative Guidance & Placement
Test Scores for Basic Skills Assessment by Campus
First-Time-in-College Students, Opening Term 83-1

WRITTEN ENGLISH EXPRESSION

	Percent of Students at or Below a Given Score					
	Ethnic Category					
Score	White Non-Hispanic	Black Non-Hispanic	Hispanic	Other Ethnic	College-Wide	National Norms
1	0	0	0	0	0	1
2	0	0	0	0	0	1
3	0	0	0	0	0	1
4	0	0	0	0	0	1
5	0	0	0	0	0	1
6	0	1	0	0	0	1
7	0	2	1	1	1	1
8	0	3	1	3	1	1
9	0	4	2	7	2	1
10	1	6	3	9	3	1
11	1	9	4	10	4	2
12	2	13	6	14	6	4
13	3	17	9	17	8	5
14	3	21	12	19	11	7
15	5	27	15	22	14	9
16	7	33	19	28	17	12
17	9	40	22	32	21	15
18	12	49	27	40	26	18
19	15	54	32	43	31	21
20	19	59	38	50	36	25
21	25	65	43	53	41	30
*22	29	72	49	60	47	35
23	36	76	55	67	53	40
24	43	81	62	68	59	45
25	47	84	68	75	64	50
26	53	86	74	80	69	56
27	59	90	78	89	74	61
28	65	92	83	91	79	66
29	71	94	87	92	84	71
30	77	95	91	94	87	76
31	83	96	94	97	91	81
32	87	98	95	98	93	85
33	91	99	97	100	95	89
34	94	100	98	100	97	92
35	96	100	99	100	98	95
36	98	100	99	100	99	97
37	99	100	100	100	100	98
38	100	100	100	100	100	99
39	100	100	100	100	100	99
40	100	100	100	100	100	99
Mean	25.7	19.3	22.4	20.4	22.9	
Median	26	19	22	20	23	
Mode	23	18	20	27	24	
Total # of Students	1,663	844	2,922	88	5,517	

*Placement Score: Students scoring below this point were recommended for developmental coursework.

National Norms based on a random sample of 30,912 students who took the CGP battery at 90 colleges during the 1976-77 and 1977-78 school year.

Table 8

Miami-Dade Community College
Comparative Guidance & Placement
Scores for Basic Skills Assessment by Campus
First-Time-in-College Students, Opening Term 83-1

WRITING TEST

	Percent of Students at or Below a Given Score			
	Gender			
Score	Males	Females	College-Wide	National Norms
1	0	0	0	1
2	0	0	0	1
3	0	0	0	1
4	0	0	0	1
5	0	0	0	1
6	0	0	0	1
7	1	1	1	1
8	1	1	1	1
9	2	2	2	1
10	3	3	3	1
11	5	4	4	2
12	7	5	6	4
13	10	7	8	5
14	12	10	11	7
15	15	13	14	9
16	18	17	17	12
17	22	20	21	15
18	27	25	26	18
19	32	29	31	21
20	37	34	36	25
21	43	40	41	30
*22	49	45	47	35
23	55	51	53	40
24	62	57	59	45
25	68	62	64	50
26	72	68	69	56
27	77	73	74	61
28	81	77	79	66
29	85	82	84	71
30	88	86	87	76
31	92	90	91	81
32	94	93	93	85
33	96	95	95	89
34	98	97	97	92
35	99	98	98	95
36	99	99	99	97
37	100	100	100	98
38	100	100	100	99
39	100	100	100	99
40	100	100	100	99
Mean	22.5	23.1	22.9	
Median	23	23	23	
Mode	23	24	24	
Total # of Students	2,533	2,984	5,517	

*Placement Score: Students scoring below this point were recommended for developmental coursework.

National Norms based on a random sample of 30,912 students who took the CGP battery at 90 colleges during the 1976-77 and 1977-78 school year.

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WRITING TO LEARN

The ever-changing needs of students along with the ever-changing student body profile are nowhere more apparent than at Miami-Dade Community College. The philosophy of Miami-Dade has always identified the role of the educator as one who guides students towards a searching analysis of their talents, abilities, and potential for contribution to our society and to themselves. Although this philosophy has not changed, the strategies for reaching this goal have changed over the years and, indeed, must be drastically revised at present. The simple truth is that the majority of entering students have not been either required to think or motivated to THINK. If for no other reason than to force students to verbalize precisely and succinctly their positions and make connections between pieces of knowledge, writing is essential to all disciplines. Requiring students to experience a higher reasoning than most of them have used before will result in more active participation in learning. The process of writing is the important issue -- even more important than the product.

Writing is a process of thought and of invention rather than a training in the conventions of scholarly communication. Recent research demonstrates a complex interrelationship between modes of thinking and writing. Writing is a basic model of learning, one that focuses on process rather than product. Many of the suggestions contained in this resource book are designed to give students freedom to practice the construction of thought by using journal writing, collaborative pre-writing, revision and rewriting.

We agree with the recent research by James Britton which concludes that "language for learning is different from language for informing." Britton

further claims that "an essential part of the writing process is explaining the matter to oneself. Without this stage, all careful note-making and selection and arrangement of data can do very little."

We endorse and strongly urge the use of class time for small group discussion, journal writing, collaborative early draft writing. We believe that all too often instructors limit writing assignments to a final product and thereby ignore the composing process which allows students to explore through writing their relationship to knowledge, articulate it and examine its value. The important point is that students should make a personal connection with knowledge before they report mastered fact. The process of writing then becomes an opportunity to move from confusion to clarity. Teachers in all disciplines and throughout each level of education can increase opportunities for students to use language for learning as well as for informing.

Clearly the intent of the present emphasis on writing and of the Gordon Rule is to require students to compose, to articulate in writing, to exhibit knowledge as opposed to learning, and to perpetuate a language of the educated human being in our society.

The present national, and indeed international, emphasis on writing-across-the-curriculum or writing to learn should not be viewed as revolutionary or innovative. Many of us recall, sometimes with more nostalgia than affection, writing in almost all of our college classes. Historically, college courses have required term papers, abstracts of outside reading, research papers, and essay examinations. The "Blue Book" was as necessary a few years ago as the #2 pencil is now.

Several factors have contributed to the demise of writing requirements, e.g., large classes, electronic grading facilities for objective exams, decreasing verbal competence of students, a national infatuation with

technology which lures us into believing that there was an easier, faster, more efficient way to complete any task, including learning and teaching. Now we are facing the reality that there is no easy way to acquire knowledge. We are realizing that only when students are able to articulate in writing what they have learned can we and they be sure what they know. Furthermore, the transmission of our knowledge to others requires the specific and precise use of the written word.

In a report in the May, 1984 "Psychology Today," Richard Clymer describes research by Foos and Clark at Florida International University. Undergraduates were given 15 minutes to read and study a 4,000 word passage. The students took notes and were told to expect a multiple choice, essay, or unspecified type of test. Everyone took the same test - multiple choice and short answer items.

Students expecting a multiple choice test scored lowest, even on multiple choice questions. Those expecting an essay did better even on the multiple choice items. The students' notes were analyzed and little difference was found either in number or content of notes.

Foos speculated that when students prepare for an essay, they take a broader focus, integrating facts into a larger context and aiding recall of specifics.

In this manual, we will suggest ways of making writing assignments, establishing a writing environment and helping students improve writing as they learn and in order to learn.

WE ARE NOT ALONE

A study of Writing Across the Curriculum programs throughout the United States shows several successful models. The Gordon Rule by any other name is alive and well across the country.

a) Loyola University

A successful course at Loyola presents a Research Paper course for the third English course. Students choose a professor in their major field who will agree to serve as consultant throughout the process of choosing a topic, gathering information, preparing bibliographies, outlines, rough drafts and final draft. The final grade is determined by agreement or compromise between English faculty and Discipline faculty. Final papers may be used for both classes as credit.

Loyola provides points for content professors in some cases (if they agree to guide a number of students). The plan requires frequent collaboration between English faculty and discipline faculty. A sense of common goals is one of the positive results.

b) University of Southern California

This program co-registers certain sections of English with specific general education courses. The English instructors can then base writing assignments on the material covered in the general education course and can work with the general education instructor to design assignments in both classes. Journals for the writing course are chronicles of their responses to material covered in the general education course. Some writing instructors, with the approval of the general education instructors, have students submit first drafts to them for their general education class assignments.

c) Beaver College Comprehensive Writing Program

Students at Beaver enroll in a two-semester course "Thought and Expression," which offers an interdisciplinary reading list and introduces students to various kinds of writing. Students use material from their other classes as the basis for writing assignments. And, writing instruction does not end with Freshmen Composition, but is integrated into all courses as an essential component of learning. English is no longer a discrete subject to be endured, but becomes an essential element of social interaction. Again, the entire faculty becomes involved in a Language Community, emphasizing and reinforcing the need for highly developed language skills.

d) Grinnel College Tutorials

Students are required to enroll in freshman tutorial devoted to a specific subject within a specific discipline. In each of the tutorials, students are taught research and writing skills applicable to a wide range of academic disciplines. During the past nine years, almost all instructors at the college have taught at least one tutorial.

e) One Instructor - Two Classes Back-to-Back

One model assigns one faculty member who is trained in both a "content" course and composition to teach a double class back-to-back with the same students. Some pairings mentioned were Art/Comp., Hum/Comp., Nursing/Comp.

f) Paired Instructors

Several colleges are using paired instructors working together to use course content and writing as a team. An English teacher sits in on a few Math classes... the Math teacher sits in on the English classes. They work together to design assignments and evaluate results.

SHORT, FREQUENT WRITING STRATEGIES

1. Pre-Class - Allow students 10 minutes before the class session begins to write what they have learned from the previous assignment, what questions or problems they had while doing the assignment. Students in a math class can explain in writing how they solved a homework problem, or examine why they had difficulty.
2. Mid-Class - Stop at an appropriate point in a lecture and ask students to write for 5 minutes to clarify in their minds what has just been taught. If there are points that they don't understand, have them write down their questions. Collect these at the end of class and read quickly to spot students who may need special attention.
3. End-of-Class - Give five minutes at the end of class to have students summarize the lesson and/or pose questions about the next assignment.
4. Journal, Logs - Any course content can be easily adapted to a Learning Log or Journal. Ask students to keep a daily record of what they are learning, what connection one piece of information has to another or what concepts they don't understand. Listed here are examples of journal questions: With what concept did you have the most difficulty this week, and what was the nature of this difficulty? Or, choose a problem or question that you felt proud of yourself for solving and explain how you did it. Or, even - What was the funniest thing that happened in class this week? Journals can be checked by trained peer tutors and special items brought to your attention for class discussion or further clarification. Some individual journal entries might be expanded into a writing assignment, re-written, polished and submitted for a grade. Generally, if journals are graded the number of entries is evaluated not the quality of the writing.

5. Free Writing - Free writing is designed to help students generate a flow of writing without regard to sentence structure or grammar. The idea is to allow a specific period of time (15 to 30 minutes) for students to write any thoughts that come to mind on the assigned topic. They are to keep writing even if they repeat words over and over to allow a free flow of thought. This technique often serves to help students focus on what they really want to say.
6. Outside Reading Reports - The unprecedented growth of technology and innovative techniques in almost every field of study requires that we read journals and newspapers to keep up with contemporary advancements. Several frequent reports on outside reading can fill this need while at the same time alerting us faculty members to many new ideas that we would not possibly have time to research by ourselves.
7. Classroom Minutes - Selecting a student to keep minutes of each class session and rotating the responsibility alphabetically is a strategy used by some instructors. As each class begins with the reading of the minutes, the instructor, as well as the class, is reminded of the previous class session. This strategy is particularly helpful if you are teaching multiple sections of the same course. Grading minutes for content, grammar and appearance is recommended to promote better quality reporting. A format should be determined in advance for all to follow.
8. Small Writing Groups - Because writing is meant to communicate thought to a reader, classmates are a valuable audience for student writing. Using a writing workshop approach offers several advantages. Groups of 3-7 seem to work best. Many teachers select the groups including an already identified competent writer in each group. Others may select groups at

random, while still others allow students to form their own groups. In any case, the strategy requires careful planning and direction.

Groups have been successful in all stages of the writing process from initial brainstorming of ideas for developing a topic to a final proof-reading and editing process leading to revision.

Guidelines For Small Groups

1. Make clear to students that they are not competing with each other.
2. Circulate while groups are working to keep them on task.
3. Give them specifics to look for and guidance in criticizing each others work. A good book of advice on peer evaluation is Peter Elbow's Writing Without Teachers (N.Y. Oxford Press, 1973).
4. A sample outline of questions and procedures for groups from Barbara Wolvoord's Helping Students Write Well: A Guide For Teachers of all Disciplines, (MLA, 1982) follows:

A Guide for Group Discussion of Drafts

1. Before handing out copies of the draft, the author should read aloud the first sentence of the paper. The group should then tell the author what that sentence leads them to think is the main point of the paper and what material will make up the body of the paper.
2. Then the author should hand out copies of the draft to all group members.
3. The author should read the paper aloud, twice.
4. There should be two or three minutes of silence to allow group members to digest the paper and gather their thoughts.

5. Group members should then, in turn, voice their reactions:

   a. State the main point of the paper in a single sentence. Who do you think is the audience for the paper? What is the paper's purpose?

   b. List the major subtopics in each major section.

   c. Were there any points at which you were confused about the subject or focus of the paper or its sections?

   d. Consider each section of the paper in turn. Is each developed with enough detail, evidence, and information.

   e. Do the points follow one another in an appropriate sequence?

   f. Is there other material that the author should include?

   g. Are the opening and concluding paragraphs accurate guides to the paper's theme and focus?

6. The writer should follow these guidelines:

   a. Do not argue with the readers, and do not explain what you meant. You are gathering data about audience response. So, simply gather it. If a particular response does not seem useful, you are free to ignore it when you revise your paper. But for you to spend the group's time arguing and explaining is wasteful and can cause the group to focus on understanding what you meant rather than on responding to what you wrote.

   b. It is usually best for you to remain silent, remembering carefully or writing down what readers say. In addition, you may want to:

      (1) Ask a reader to clarify or expand a statement, so that you understand it thoroughly.

      (2) Ask readers to respond to an idea you have for improvement of some aspect of the paper they're unhappy with.

      (3) Repeat to the group what you think they're saying, just to make sure communication is complete.

PEER TUTORS

Tutors can provide a substantial service to you if they are carefully selected, trained and guided. They are not professionals and cannot be expected to make professional decisions or to serve as a substitute teacher. They can represent a humanistic influence in our large systems that often become mechanistic and sterile. Often their only reward is the success of their students. For this reason, the faculty member, the tutor and the student must agree on what criteria will constitute success. Lack of student progress may not always be the result of ineffective tutoring. It will be the responsibility of the faculty member to decide the success of the tutor.

SUGGESTED GUIDELINES FOR SELECTING & WORKING WITH IN-CLASS TUTORS

1. Early in the term, identify the students who show ability and confidence in understanding your course. If you are looking for assistance in dealing with the required writing in your class, identify the competent writers. Urge your students to enroll in a peer tutoring training course, English Department, 7322, 685-4231.
2. Arrange to meet either with several selected students or individually to determine what interest each has in tutoring and the attitude each has towards the concept of helping others. At this time, faculty already using tutors or experienced tutors might be called on to help you explain the process.
3. Decide with interested tutors, specified compensation which you are prepared to offer. Tangible compensation might include:
    a. Extra credit in class
    b. Released time from certain class activities

c. Reduced course assignments, eg. exemption from final

4. Try to meet regularly with your tutors to suggest strategies and give direction.
5. Require regular documented reports on each student. Folders similar to those kept in the Labs might be used.

IN-CLASS TUTORS vs LAB TUTORS

Each of these support systems has advantages and disadvantages. In-class tutors will be your students who know your style, your particular requirements and your specific assignments. They know how you want things done and what you are looking for in a given assignment. In short, they know you.

Lab tutors, on the other hand, must take a student's perception of what the assignment was and what was expected of him. They try to help in a vacuum-far removed from the origin of the task. Students who go to a lab for help are usually required to enroll for credit, a costly process for someone who may need minimal clarification.

Obviously, some of your students may need more help than your in-class tutors can provide either because they lack skills or the time to work with the more severely under-prepared student. In these cases, the labs provide the appropriate support.

SPECIAL TO MATH TEACHERS

Because teaching writing seems alien to mathematics instruction, many math teachers have found the writing requirements difficult to achieve. The section on "Short, Frequent Strategies" will give some suggestions, but we found some specific assignments in our research that you might want to try (James Howard, Writing to Learn, Council for Basic Education, 1983).

One instructor discovered that math students often learn procedures without understanding the mathematics involved. He learned that when they explained in writing what they did when they worked equations, they began to understand mathematics. Some of his quick assignment were:

1. Explain what an angle is and how you label it.
2. Using complete sentences, define the slope of a line. Discuss the implications of zero, positive, negative, and no slope.
3. What is the difference between the mathematical terms factor and coefficient?

A longer assignment to be written outside of class was:

> Harry Lewis, the author of your geometry textbook, is revising the edition we are using. He wants you to rewrite for him the section on the division postulate. Using the following guidelines, write the section that will appear in the fourth edition of the book.
>
> Guidelines:
>
> 1. Review the current section on pages 118-120.
> 2. In your revision, use a practical example.
> 3. Provide two illustrative problems so that one deals with segments and the other with angles. Provide solutions.
> 4. You must close your book when you begin to write.

Another instructor who incidentally vowed she would never use writing in her math class, soon found that when she taught conceptual material, her students understood better if they wrote about it. As a homework assignment before a traditional math test, she gave the following assignment:

Discuss all possible positions of the graphs or two linear equations in the plane. Include in your answer, the importance of slope and y-intercept on each of the positions. Identify each position as consistent or inconsistent.

She found that she could read and grade the 29 papers from her class in one 15-minute sitting and that the writing proved to be an especially effective study discipline.

HOW TO MAKE AND RESPOND TO WRITING ASSIGNMENTS

Increasing the amount of assigned writing does not necessarily improve students' writing. Research indicates that the way in which writing is assigned and responded to is much more important. An effective plan and a thorough explanation of the assignment encourage success and often help students to avoid disaster.

1. Define the Audience

   If students are encouraged to think of writing as a means of communication to a specific audience, they will often produce better papers. The teacher is usually the audience and students correctly assume that the teacher already knows more about the subject than they do. If the audience is defined as a classmate who has been absent, a high-school student, a younger brother, parents, or the editor of the school newspaper, then the tone, the shape, and the language of the paper will differ.

2. Help Students Establish Purpose and Focus

   When given a writing assignment, many students grab pencil and paper and begin composing with no thought or attention to what the purpose or focus of the written communication should be. Some teachers have used small groups or pairs of students in a buddy system to generate ideas and establish purpose and focus (See Strategies). Teachers can give a list of questions students can ask about each other's writing to help keep the groups on track. Again, try to maintain the role of coach or guide.

3. Present Models

   Showing students the process used by professional writers or yourself will give them a model to follow. Former students' papers or examples from such books as A Writer Teaches Writing by Don Murray, will give students ideas about outlining, free writing, rough drafts and revising to improve

their papers. When students see that you, too, compose through a process of invention, organization, rough draft and revision, to product, they may not sing the old song, "I just can't write," or "I have no talent for writing."

4. Make Assignments Worthwhile

   Every assignment should be worth your students' time and yours. Assignments should help students learn something.

5. Make Assignments Clear

   This is a difficult rule to follow, which takes time and patience. We have to know precisely what we want our students to gain from an assignment.

6. Make Assignments Realistic

   Allowing insufficient time for students to develop their thoughts and compose a relatively error-free piece of writing can lead to your own frustration as well as your student's frustration.

7. Do the Assignment Yourself

   Writing the assignment can give an instructor an excellent means of determining whether or not an assignment is reasonable. This strategy also allows the teacher to organize criteria for grading. Try composing at the blackboard; let the student watch you write.

8. Grade, Don't Correct Papers

   Correcting errors is the responsibility of the student. Your time is better spent deciding the worth of each paper.

9. Share Your Criteria With Students

   Explaining how you make distinctions between passing and failing, among good, average or poor grades doesn't take much time and will clarify the standards that you expect from writing assignments. You might even allow students to grade each others' papers after the criteria have been carefully established.

TO GRADE OR NOT TO GRADE?
ALTERNATIVES TO LETTER GRADES

Although the red pencil is standard equipment for all teachers and sometimes seems to be a permanent extension of our writing hand, the red-ink method has some disadvantages. Granted we can mark papers, even write lengthy comments in a setting of our choice, but have you watched students when you return their papers after you've spent hours reading, evaluating, and commenting copiously on each paper? A quick glance at the grade, a nerve-wracking crumpling of the paper and a slam-dunk in the wastebasket can bring tears to your eyes and firm resolution never to require writing again. Red ink does not promote communication. Often the same comments made orally can promote dialogue and increase student participation in a real effort to explore the paper's problems.

We are suggesting the occasional use of another system of communicating with students about their writing - the conference method, either by using tapes or individual meetings.

The Taped Response

Most students have cassette players. If they don't, the Audio Visual department or language labs can provide them. A two-or-three minute recording of the strengths and weaknesses of a paper or a taped response to journal entries offers a personal approach. Students provide their own tapes and submit them with their papers. With this type of evaluation, it is important to limit your comments to one or two weaknesses in the paper and include a positive remark about a strength in the paper to establish an unthreatening tone.

The One-to-One Conference

The short, frequent individual conference method has received tremendous support from English teachers, junior high through the university. Conferences may last from two to three minutes to much longer. They may be scheduled as impromptu, required or optional. In A Writer Teaches Writing, Don Murray describes how he used the conference method with a large number of students who had little free time.

One method is to distribute a blank appointment schedule and have students fill in a time to meet during office hours. Students may be scheduled every five minutes. Students can certainly be scheduled during a regular class period while the class is working on another assignment.

The conference method has many advantages. Often, we can watch facial expressions or discover through dialogue whether a student understands the material.

Guidelines For Student Conferences

Conferences present an opportunity to involve the student in an active discussion of the paper. Let the student share the reading process. A good way to conduct the conference is to read the paper with the student beside you and express your opinions as you read. Students may want to take notes on what you say and use the suggestions to revise their work.

Another sort of conference that you might want to try, particularly if students are working on a lengthy outside report, is to assume the role of consultant or guide. This method requires the students to discuss their progress in stages during the process of composing. You can encourage, respond, give advice, but the student controls the conference. This method encourages students to analyze their own work and to take responsibility for their own progress. You can be sure that the student is not copying pages of

library reference material with no real understanding of the content. The student is truly exploring what has been learned by articulating knowledge. And you are learning more about individual students and their learning styles.

GRADED WRITING

Just as the coach who has to prepare the team for the big game knows, a time comes when we must put a grade on students' written work. Many teachers have asked about giving two grades -- one for "content" and one for "writing." We believe that knowing and telling are inseparable. Good writing involves a definite purpose, clear organization, specific details, and appropriate language. Here are some general guidelines used by many teachers to grade papers written outside of class.

A. Writer uses an abundance of specific, relevant details, including concrete examples, that clearly support generalizations. Thesis statement effectively reflects the writer's purpose. Body paragraphs carefully follow the organizational plan stated in the introduction and are fully developed and tightly controlled. A wide variety of sentence constructions are used. Appropriate transitional words and phrases and effective coherence techniques make the prose distinctive. Virtually no errors in syntax, mechanics, and usage occur.

B. Writer presents a considerable quantity of relevant and specific details in support of the subject. The thesis statement expresses the writer's purpose. Reasonably well-developed, unified paragraphs document the thesis. A variety of sentence patterns occur and sentence constructions indicate that the writer has facility in the use of language. Effective transitions are accompanied by sentences constructed with orderly relationship between word groups. Syntactical, mechanical, and usage errors are minor.

C. Writer employs an adequate amount of specific detail relating to the subject. Thesis statement and organization are unambiguous. Paragraphs generally follow the organizational plan, and they are usually sufficiently unified and developed. Sentence variety is minimal and constructions lack sophistication. Some transitions are used and parts are related to each other in a fairly orderly manner. Some errors occur in syntax, mechanics, and usage.

D. Writer includes very little, if any, specific and relevant supporting detail but, instead, uses generalizations for support. Thesis statement and organization are vague and/or weak. Underdeveloped, ineffective paragraphs do not support the thesis. Sentences lack variety, usually consisting of a series of subject-verb and, occasionally, complement constructions. Transitions and coherence devices are not discernible. Syntactical, mechanical, and usage errors occur frequently.

SUPPORT SERVICES

1. College-wide - The R.S.V.P. program is described following this section.
2. Each campus has a Writing Lab and/or Developmental Center.

CAMPUS	PERSON TO CONTACT	PHONE	ROOM
South	Marsha Cummings	596-1178	6319
North	Elaine Ludovici	347-1270	6124
MW NWC	Joyce Crawford	347-3111	2222
Med. Center	Elizabeth Biers	347-4545	1202-1

3. Campus Contacts

South	Jim Preston	596-1284
North	Katie Mackay	347-1312
MW NWC	Irene Lipof	347-3184
Med. Center	Dick Townsend	347-4520

4. North Campus - In addition to the lab, North Campus offers two unique programs.

   a. Faculty Resource Center through the SPD office. Plans are underway to provide a library of current materials, including the references cited in this manual, for each division. Check with your division office or SPD office (4387).

   b. Peer Tutoring Course - If you decide to use peer tutor assistance, a non-credit course in Peer Tutoring skills is available through the English Department, (4231).

Computer-Based Instructional Development and Research
Room 2202
South Campus
Monday-Friday, 8:00 a.m. - 4:30 p.m.
Telephone: 596-1290

The DIVISION OF COMPUTER-BASED INSTRUCTIONAL DEVELOPMENT AND RESEARCH helps the faculty and staff of Miami-Dade Community College to use computers in realizing their teaching/learning goals. Individuals, departments, and campuses may initiate new projects or take advantage of existing programs. RSVP (Response System with Variable Prescriptions) and Camelot...The Individualized Information System are the main vehicles used by the division to develop, deliver, and evaluate instructional/advisement programs. The two systems can be programmed to assess students' performance, generate individualized printed feedback, and provide descriptive statistics for any course in any setting; RSVP operates in the "batch" processing mode on a mainframe IBM computer, while Camelot operates in a stand alone microcomputer environment. Following are descriptions of several instructional programs developed with these two systems and available to South Campus faculty.

The RSVP Feedback Program for Individualized Analysis of Writing simply requires students to write and teachers to make a twofold decision about each paper: one to place the paper at the appropriate level (a decision based on the skill areas included at each level and the readability estimates of the feedback), and the other to analyze the specific problem(s) warranting feedback to the student at that level. The program allows faculty members to select--from a bank of more than 180 instructional messages written at 4 reading levels--feedback concerning the mechanics and organization of a written assignment; the program is independent of specific course content, textbooks, and class setting. Once the selections are made for a student, RSVP prints the feedback in an individualized letter that generally runs from two to four pages and is designed to help in the editing/revising stage of writing. The two most frequently used levels of feedback have also been put in the Camelot system.

Practice tests are available to help students prepare for the reading, writing, and computations portion of the CLAST. RSVP scores the tests and generates a separate individual letter for each one. The letter reports the student's total test score and analyzes the student's strengths and weaknesses in each of the skills covered by the test. This analysis either congratulates the student for correctly answering all the questions related to a skill (RSVP computes the group scores) or tells the student which questions were missed and explains why the responses are incorrect and which are the best choices. The CLAST practice test feedback for reading and writing is also being put in the Camelot system.

Instructional support is available in the general area of STUDY AIDS. Students may respond to surveys on Cognitive Skills, Study Skills, and Test-Taking Effectiveness and in turn receive from RSVP individualized analyses of their strengths and weaknesses, a list of resources for help and counseling, and specific suggestions for ways to improve and increase their abilities in these crucial skills. The Study Aids surveys are being put in the Camelot system, too.

Further instructional support is available for the HUMANITIES (HUM 1020) and SOCIAL SCIENCE (SSI 1120) General Education core courses. Students may take RSVP surveys designed to assess their understanding of material presented in the two courses and then receive individualized diagnoses of their strengtns and weaknesses. Similar kinds of projects can be developed for any course or program on South Campus.

RSVP has been used to enable department staffs to make individualized study/-exercise assignments according to selected student characteristics. After having students take a diagnostic test or after personally diagnosing a student's needs and recommending which skills ought to be worked on and at what level, the staff members receive from RSVP a list of possible assignments for every student. Such support has been developed for the Learning Support Services reading program at South Campus. Naturally, these programs are specific to the materials at hand in the reading lab, but the process can be repeated in any setting.

The Division of C-BDIR maintains a microcomputer lab for faculty use and development and can therefore order, examine, and demonstrate certain microcomputer softwares. HOMER: A Computerized Revision Program for Apple II and Apple IIe, WANDAH (Writing-aid and Author's Helper), and some physics modules developed under the direction of Alfred BORK at the Educational Technology Center (University of California, Irvine) are examples. Additionally, the Division has available programs that estimate the reading levels or written materials such as articles and textbooks.

The Division develops interactive video programs, which enable an instructor to place a video player under the control of a microcomputer, thereby providing an opportunity to introduce the video program, interrupt it at any given point, ask questions about what has been viewed thus far, or give explanations about the ensuing segment. In the event that students miss a question, interactive video allows the instructor to route them back to the video segment that pertains to the question. All of theses manipulations are done automatically through programming the programs designed for faculty development; examples are: Guided Exposure to Microcomputers (GEM) and Mind Expansion through Exposure Technology (MEET). The Division also has available an interactive videodisc called The Puzzle of the Tacoma Narrows Bridge, a physics experiment/demonstration that can be previewed on the Division's equipment.

Every January and July, the Division publishes TIES, a newsletter intended to provide a forum for faculty members to describe the instructional computing projects they develop with the Division and to inform the faculty, staff, and administrators of Miami-Dade about instructional computing resources and possibilities.

The Division welcomes new ideas and suggestions and wishes to help anyone interested in using or developing an instructional computing program. For more information, call Kamala Anadam (Division Director) or Lorne Kotler at 596-1290. You may also wish to consult one of the following people who are among the South Campus faculty to have used the Division's services: Marjorie Buhr, Marianne Burr, Don Clark, George Emerson, Bob Joyce, Sue Kahn, Jim Preston, Larry Steed, Roberta Stokes, Pam Wright.

SUPPLEMENTARY SOURCES FOR WRITING ACROSS THE CURRICULUM

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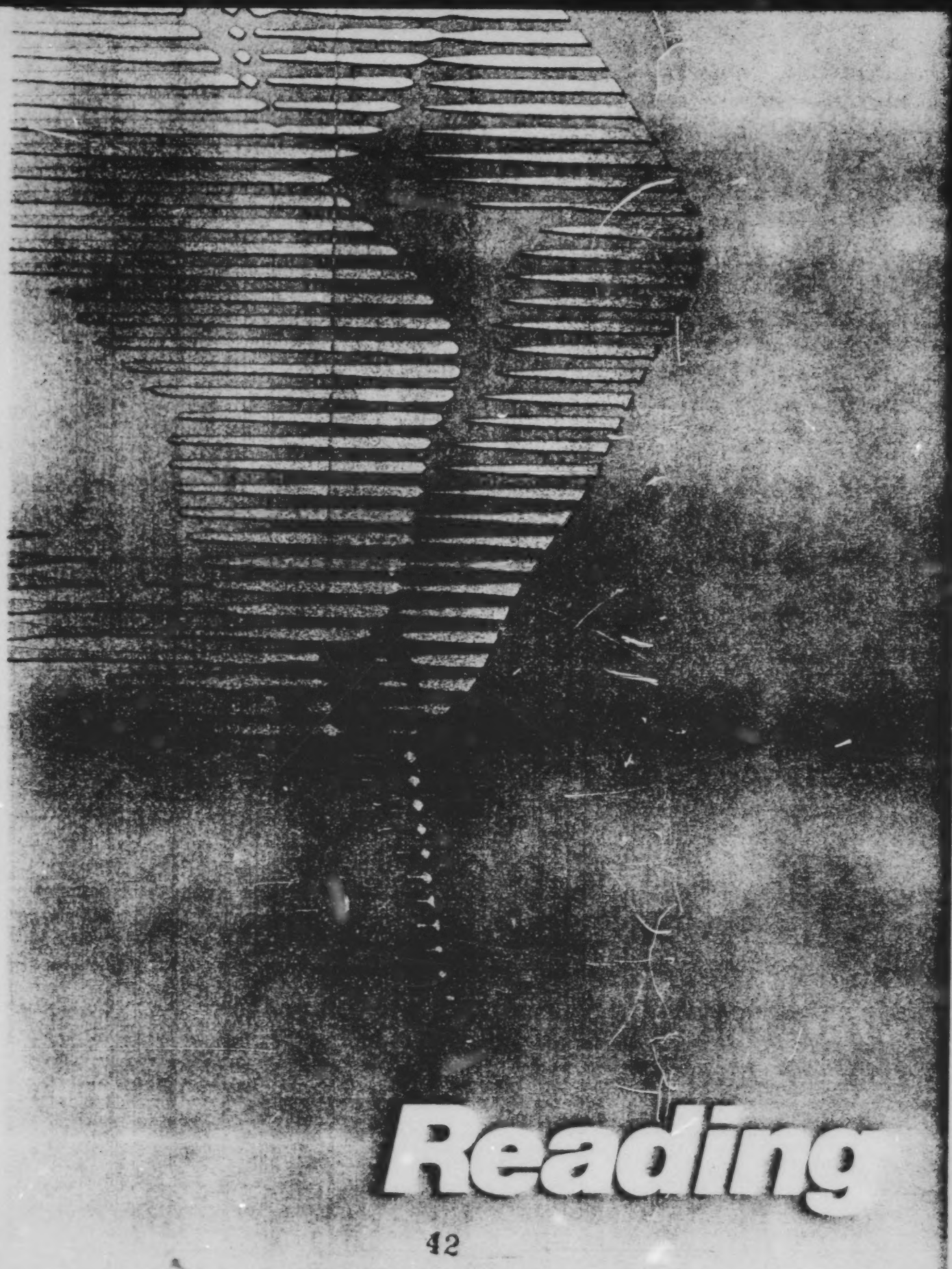

Reading

ANNOTATED TABLE OF CONTENTS

I. INTRODUCTION

The introduction to this resource book is in a question-and-answer format. The questions are posed from the point of view of the content area teacher who may not see the need for giving any attention to reading-thinking skills in a college level content area classroom. The answers are phrased in everyday language and offer a sound rationale for instructing students in reading-thinking skills and immediately applying those skills to the understanding and remembering of the concepts within the content area.

While the purpose of this resource book is primarily to aid content area teachers, many of the pages are directed to the student. Feel free to duplicate any of the materials and share with your classes.

Some Questions and Answers about Reading Across the Curriculum
A NOTE ABOUT POOR READERS

II. TEXTBOOK READABILITY

A copy of the extended Fry Readability Graph with directions for its use. This is one of several readability procedures that gives the approximate reading level (grade) for a textbook.

Another Aid - TEXTBOOK SUITABILITY

A worksheet that directs the teacher's attention to specific aspects of a book, such as format, question abstractness, journalistic style, adequacy of graphic materials, etc., to help determine whether the book is suitable for a class or individual student.

III. TEXTBOOK STRUCTURE

Parts of the Text - an outline of the major parts of a textbook and a brief explanation of the function of each.

Previewing the Textbook - a fill-in guide sheet that requires the student to locate important and useful parts of the textbook before reading.

Textbook Study Techniques

SQ3R - Survey, Question, Read, Recite, Review

OARWET - Overview, Ask, Read, Write, Evaluate, Test

Includes a fill-in guide sheet that requires the student to identify the major parts of a textbook chapter and use them with the SQ3R

technique. (With modifications, the guide can be adapted to other techniques as well.)

Textbook Pattern (Study) Guide

A strategy to help increase student understanding of the text. The guide addresses the relationship among the author's organizational structure, the reading/thinking skills needed to comprehend the material, and helps the student identify and locate important concepts.

IV. LEARNING THE IMPORTANT IDEAS FROM TEXTBOOKS

Bookthinking Operations

Five essential thinking operations that can be taught in all subjects and will promote independence.

Graphic Organizers

How to construct and use graphic organizers in the content classroom to visually display important concepts and their relationships.

- How to Construct
- Examples

Relating New Ideas to Known Ideas

- Related Questions
- Semantic Mapping
- RADAR

Vocabulary Learning

This section describes several ways of teaching the vocabulary of instructional unit.

- Before Reading the Textbook
- After Reading the Textbook
  - List-Group-Label
  - Clues and Questions
  - Crossword Puzzles

V. SCIENTIFIC/TECHNICAL READING

This section discusses the factors that distinguish scientific/ technical reading from reading in other subjects. Useful approaches to this unique type of reading are offered which will assist the instructor in facilitating student's comprehension and retention of technical information in textbooks and other printed materials.

Introduction

Vocabulary

- Key Roots and Affixes
- Vocabulary Cards
- Specialized Vocabulary Books

Patterns of Writing

- Classification
- Experiment
- Process
- Statement of Facts
- Cause and Effect
- Problem-Solving

VI. GIVING THE READING ASSIGNMENT

Some ideas to keep in mind when deciding upon and giving a reading assignment.

- Assignment Planning Form
- Reading Assignment in Subject Areas

VII. TEST-TAKING GUIDELINES

Suggestions to students on how to organize themselves for tests, as well as techniques on taking essay, objective and standardized tests.

CLAST - The College-Level Academic Skills Test

The reading skills addressed in the Reading Sub-test of the CLAST are explained for the professor and the student.

VIII. APPENDIXES

A. Roots an Affixes in Scientific/Technical Writing

BIBLIOGRAPHY

INTRODUCTION

SOME QUESTIONS AND ANSWERS ABOUT READING ACROSS THE CURRICULUM

Q. Why do I have to give attention to reading in my course when there are reading courses specifically designed for students with reading problems?

A. Courses designed for students with reading problems emphasize learning-to-read. In these courses, students are guided to practice and improve in the basic skill areas in which they have particular weaknesses. In contrast, content area courses across the curriculum emphasize a different type of reading: reading-to learn. This type of reading requires the direct involvement of the content area specialist, the expert who is thoroughly familiar with the course content.

Reading-to-learn strategies are different for each course and specific task. These strategies are learned most effectively when applied immediately to relevant written material. Thus, the content area instructor is in a unique position to make an invaluable contribution to students' learning from textbooks.

Q. Why do I need to teach a college student to read a textbook assignment? Didn't they learn how in elementary school?

A. Elementary school reading and college reading are different types of reading. The skills developed in elementary school are not adequate for college learning. In college, each course has its own extensive technical vocabulary and presents its own set of reading demands. The concepts are more abstract and we expect greater amounts of independent learning from the student. There is no upper limit to acquiring useful learning skills. Thus, content area instructors can provide the most

appropriate strategies for learning from the specific written materials used in their own courses.

Q. Won't this extra attention to reading skills take time and energy away from the content of my course?

A. Naturally, content objectives have primary importance. Procedures designed to improve student learning from textbooks take less time than you might think and can be successfully integrated into customary classroom activities. Also, this time will be time-well-spent due to the benefits in learning that will result.

Q. Isn't assigning textbook reading enough?

A. Merely assigning textbook reading is only testing the reading skills that students have developed to that point in time. Distributing small amounts of relevant guidance across the semester's reading assignments can add to and enhance each student's set of reading skills. As a result, students will be able to read-to-learn more effectively and with a sense of relevancy about the reading assignment.

Q. How can I reinforce reading skills? I'm not specially trained to do it?

A. Fortunately, you do not need extensive specialized training to reinforce reading skills in your classroom. What you do need is a resource where you can find some uncomplicated effective ideas for enabling students to locate, comprehend, remember, and retrieve the information you desire for them to learn. This handbook provides those ideas and is designed to facilitate your decisions about what to do in order to reinforce reading skills in your content area classroom.

A NOTE ABOUT POOR READERS

How can one recognize a poor reader at the college level? In general, the very act of reading causes observable discomfort in those for whom reading is difficult. If the instructor suspects that poor reading is the cause of unfinished or poorly done assignments, there are several courses of action that may be considered.

A very informal method that tests reading ability is to simply ask the student to read aloud (in private) from some course material. Be sure that the passage you are asking the particular student to read is one that can be read by the average student in the class. If the student repeats, omits, distorts sounds, or substitutes words and seems uncomfortable while reading, that student should be referred to the appropriate area at each campus (Basic Communication Studies, North; Learning Support Services, South; The Multi-Skills Lab, Wolfson Campus; Learning Media Center, Medical Campus). At the same time, the instructor should consider giving alternate course assignments such as oral reports or other projects that will allow the student to demonstrate her/his understanding of the concept being taught.

Students who demonstrate severe disabilities that interfere with learning usually can be identified during the initial college assessment. At the North Campus, Diane Rossman coordinates the Learning Disabilities Lab and should be contacted in case of a question about dyslexia and any other disabilities that might interfere with learning.

TEXTBOOK READABILITY AND SUITABILITY

READABILITY

The Readability formula and graph are designed to present a simple and fast way of determining the difficulty of reading passages.

While several factors such as layout, print, use of or non use of illustrations, writer's style and organization, mechanical aids (italics, boldface, words in color, subheadings), concept complexity, vocabulary difficulty and grammatical complexity contribute to the difficulty of a reading passage, the last two-vocabulary difficulty (length of words) and grammatical complexity (sentence length) are used as primary indicators in many readability formulas.

The Fry readability graph uses word length and sentence length. It was developed by Edward Fry who used "simplicity" as a prerequisite. It is aimed at the United States educational scene and thus, the grade-level designations are for America.

On the following two pages, you will find Expanded Directions for use with Fry's graph as well as the graph itself with abbreviated directions and examples.

EXPANDED DIRECTIONS FOR WORKING READABILITY GRAPH

1. Randomly select three (3) sample passages and count out exactly 100 words beginning with the beginning of a sentence. Do count proper nouns, initializations, and numerals.

2. Count the number of sentences in the hundred words estimating length of the fraction of the last sentence to the nearest 1/10th.

3. Count the total number of syllables in the 100-word passage. If you don't have a hand counter available, an easy way is to simply put a mark above every syllable over one in each word, then when you get to the end of the passage, count the number of marks and add 100. Small calculators can also be used as counters by pushing numeral "1", then push the "+" for each word or syllable when counting.

4. Enter graph with average sentence length and average number of syllables; plot dot where the two lines intersect. Area where dot is plotted will give you the approximate grade level.

5. If a great deal of variability is found in syllable count or sentence count, putting more samples into the average is desirable.

6. A word is defined as a group of symbols with a space on either side; thus, "Joe," "IRA," "1945," and "&" are each one word.

7. A syllable is defined as a phonetic syllable. Generally, there are as many syllables as vowel sounds. For example, "stopped" is one syllable and "wanted" is two syllables. When counting syllables for numerals and initializations, is 4 syllables and "IRA" is 3 syllables, and "&" is 1 syllable.

This "extended graph" does not outmode or render the earlier (1968) version inoperative or inaccurate; it is an extension.

ESTIMATING THE SUITABILITY OF TEXTBOOKS

1. Vocabulary
(What is the ratio of familiar to unfamiliar words? _____ suitable _____ unsuitable

2. Syntax
(What is the ratio of simple to complex sentences? _____ suitable _____ unsuitable

3. Information Density
(What is the number of propositions of information per paragraph?) _____ suitable _____ unsuitable

4. Interest Potential
(How relevant is the material to the interest of the readers?) _____ suitable _____ unsuitable

5. Content Area Eccentricities
(Are there illustrations, tables, notations, etc..., peculiar to books in this content area?) _____ suitable _____ unsuitable

6. Editorial Format
(Does the book's layout and printing facilitate comprehension?) suitable unsuitable

7. Question Abstractness
(What is the distribution of factual, critical, applied, and judgement questions?) suitable unsuitable

8. Journalistic Style
(Does each paragraph begin with a clear, topic sentence?) suitable unsuitable

9. Reading Aids
(Are introductory outlines, marginal notes, summaries, footnotes, bibliographies, indexes, glossaries adequate) suitable unsuitable

TEXTBOOK STRUCTURE

PARTS OF A TEXTBOOK

I. TITLE PAGE
   A. The title will indicate the subject covered. It may also indicate the approach that the author takes (subtitle).
   B. Author's name - the author's credentials.

II. COPYRIGHT PAGE
   A. Edition and the date of publication

III. PREFACE
   A. THE INTRODUCTORY PREFACE indicates
      1. author's approach
      2. the subjects covered
      3. how the work differs from previous editions
   B. THE CHAPTER PREFACE
      1. range of discussion
      2. how the chapter builds upon previous material
      3. key terms that may be introduced

IV. TABLE OF CONTENTS
   A. Overview - general listing of topics and the order in which they are covered.
   B. Expanded Table - may list in some detail the many subtopics that may be included in a chapter.

V. INDEX
   A. The Index usually brings together references to a single topic that are scattered throughout a text.
   B. The Index is useful for organizing material for examinations.

VI. THE GLOSSARY
   A. The Glossary defines terms that are used in a technical way for a particular subject.

VII. THE APPENDIX
   A. Science/mathematics - solves problems and explains symbols.
   B. Can contain actual documents upon which the chapters are based.
   C. Can provide diagrams and other visual aids to help comprehension of certain concepts.

VIII. BIBLIOGRAPHY
   A. Outside Sources which discuss various aspects of a given topic in greater detail.
   B. Best outside readings.
   C. "Annotated" listings will give comments on each source.

IX. TYPOGRAPHY
   A. Importance of ideas within a chapter: (e.g., all capitals may be used to indicate chapter title; boldface may be used for subtitles and key terms; italics may indicate definition).

X. ILLUSTRATIONS

Illustrations highlight important points. Specific details of an illustration, as well as the labels, should be studied to show relationships and to put concepts in a pattern.

PREVIEWING YOUR TEXTBOOK

(An exercise to help you become familiar with the textbook)

Title of textbook_____

_____

Publishing Date_____ Why is this date significant to you?

_____

Read the PREFACE, FOREWORD, or INTRODUCTION. Write down the author's approach on the subject (of the text) _____

_____

Is this approach different from others?_____If so, how?

_____

_____

Write down all the textbook parts (excluding title, preface and copyright) the author included in this text:

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Look at the book title again and write down some questions the title might suggest:

1. _____
2. _____
3. _____
4. _____

Look through the table of contents and write some questions that are suggested by 5 different chapter headings.

1. _____
2. _____
3. _____
4. _____
5. _____

Now, turn to a chapter that uses visuals (pictures, charts, graphs, tables, diagrams, maps, etc.). Write down the concepts illustrated by different visuals and the page on which they are located.

1. _____

   page_____
2. _____

   page_____
3. _____

   page_____

Look at other chapters to see what aids are provides:

Heading/subheadings	_____	Words-in-color	_____
Chapter Introduction	_____	Italics	_____
Chapter Summary	_____	Discussion Questions	_____
Chapter Glossary	_____	Study/Review Questions	
Marginal Needs	_____	Other	_____

TEXTBOOK STUDY TECHNIQUES

SQ3R METHOD OF STUDYING A TEXT CHAPTER

Proper use of this valuable tool can result in faster reading, a clearer understanding of important points, and should be an aid in preparing for exams. Students should be given a class demonstration, after which they should be able to use the SQ3R method independently.

SURVEY — A glance at headings, visuals, summary paragraphs helps to overcome inertia (a good way to "ease in" to a reading assignment) and gives vision.

QUESTION — Turn headings and paragraph main ideas into questions. This keeps one mentally alert and involved, helps set the mind to look for answers and to relate them to previous learnings, and should make exam questions seem familiar.

READ — The purpose is to answer the questions devised in step #2. Go on for paragraph by paragraph comprehension. Don't go on until each question is properly answered. Material in one paragraph usually builds on what came before.

RECITE — Do this with the book closed, and OUT LOUD. Answer your questions as if you were teaching someone else. If you can't do it, read the material again. Reciting aloud is the most powerful tool known to combat forgetting. (It keeps the mind holding an idea long enough to consolidate the neural trace in the long term memory banks.)

REVIEW — After all reading is complete, look over notes to synthesize ideas and relationships. Check your memory by reciting the major points aloud.

* The guide that follows, Previewing A Chapter Using SQ3R, should be used only after the five steps above have been thoroughly discussed. The initial use of the following guide should be done under the supervision of the classroom instructor.

PREVIEWING A TEXTBOOK CHAPTER USING SQ3R

WORKSHEET

1. How long is this chapter?_____Are there subheadings?_____

   Are there maps, graphs, or illustrations?_____

2. Read the title of the chapter. Turn this title into a question and write it here_____.

3. Make questions of all the subheadings and write them here:

   _____page_____

   _____page_____

   _____page_____

   _____page_____

   _____page_____

   _____page_____

   _____page_____

4. READ - to find the answers to all of your questions.

5. (RECITE OR "RITE) Jot down answers here: (#3)

   _____

   _____

   _____

   _____

   _____

   _____

   _____

6. Review (Write a summary of this chapter in your own words)

OARWET - TEXTBOOK CHAPTER STUDY METHOD

OVERVIEW

1) Read the chapter title. It uses key terms to tell what the chapter is about.

2) Read sub-headings. This is the author's outline of the chapter. If maps, graphs, charts, diagrams, etc., are included in the chapter, glance through them.

3) Go to the beginning and read the first two or three paragraphs, looking for the main idea of the chapter.

4) Go to the end of the chapter and look for the "Summary" or just read the last paragraph to see if it sums up the ideas of the chapter. Sometimes this part is called "Conclusion" or "Review".

ASK

What questions do authors ask? Usually the questions found before or at the end of a chapter cover the main points. These can be used later or reviewed for Chapter tests.

READ

Only after completing Overview and Ask steps do you read. Keep in mind the information picked up during the Overview and the questions from the Ask. This will enhance the comprehension because you know the direction the information is taking.

WRITE

This step means taking notes. Putting down on paper the facts that support the Main point shows that you've got information.

EVALUATE

You begin this step by connecting new information learned from your reading with knowledge you already know. Evaluating helps you tie things together.

TEST

Use this step to check your knowledge of the chapter. Take time to answer the Study Questions so often found at the end of the chapter.

TEXTBOOK PATTERN (STUDY) GUIDE

TEXT PATTERN/STUDY GUIDE

The textbook is often the exclusive source for the structure and content of a course. For poor readers understanding the textbook is an impossibility and even average readers have difficulty with the concept load.

One effective strategy to increase students' understanding of the text is to provide students with a pattern/study guide. Generally, study guides meet three important needs: 1) They help students with poor reading skills, 2) They focus students' attention on the reading/thinking processes required for comprehending the text, and 3) Pattern guides help students identify and locate important concepts. Specifically, the pattern guide addresses the relationship among the author's organizational structure, the reading/thinking skills the student needs in order to comprehend the material, and the important concepts.

The relationship within the passages determine the author's specific organizational pattern. Students need to be aware of the author's organizational pattern and the corresponding structure words to help understand and remember information from the text. (See also The Author's Words)

Structure Words

Paragraph Pattern	Structure Words
simple listing	for example, for instance, specifically, another, besides, also, in addition, moreover, furthermore
cause/effect	consequently, therefore, thus, as a result, however, hence
contrast/compare	on the other hand, but, by contrast, yet, in particular
time order	another, additionally, next, first, second, etc., then, and furthermore, also

How to Develop a Pattern Guide

1. Identify essential vocabulary students must know in order to comprehend material.

2. Identify the essential concepts to be taught.

3. Read the appropriate section(s) of the text noting the portions of the material which correspond to the concepts you consider essential (#2 above).

4. Identify and structure words which point up the author's organizational pattern.

5. Integrate the essential concepts, the author's organizational pattern, and the reading/thinking skills the students will need to use.

6. The professor must determine how much help to give the students in completing the guide. Some students may only need to know which section the information is in; other students may need specific page numbers. Remember, the goal is to increase the student's comprehension of the textbook. So provide as much detailed assistance as individual class or students need. (Note the difference in the amount of help given in #I and #II below).

I "KINETIC THEORY"

Cause/Effect

The kinetic theory explains the effects of heat and pressure on matter. Several ramifications of the theory are discussed in this chapter. Be alert to causal relationships as you read.

1. Gas exerts pressure on its container because
   A. _____
   B. _____

2. What causes pressure to be exerted in each arm of the manometer?
   A. _____
   B. _____

3. The effects of colliding molecules which have unequal kinetic energy is _____.

4. What causes the particles of a liquid to assume the shape of the container?

   _____

   _____

II "ORGANIZING THE FORCES OF LABOR"

Causes/Effects

In this section, look for cause/effect relationships in the situations mentioned below. Add the cause or effect in the proper column.

	Cause		Effect
1.		1.	Saving money was difficult or impossible for unskilled labor.
2.	Owners felt it was necessary to keep costs as low as possible.	2.	
3.		3.	Only the boldest workers dared to defy management and join a labor organization.
4.	By 1800's, wages of unskilled workers exceeded skilled artisans.	4.	
5.		5.	The workingmen's parties supported Jackson after 1828.

The reading/thinking process is identified at the upper left of the guide (Cause Effect) and again in the directions alerting the student to causal relationships. In example I more help is given whereas, in Exampie II, the student must understand the nature of the causal links between events to complete this guide. (The second example [II] is for the more able reader).

III "THE UNITED STATES DIVIDED"

Contrast/Compare

Using assigned pages, you will contrast and compare the repercussions in the South and the North to the Supreme Court's decision in the Dred Scott Case.

The South	The North
1. (Hint: newspapers)	1.
2. (Hint: Democratic Party	2.
3.	3.
4.	4.

Example III reflects the comparisons of the relationships in the history text. The "Hint" is given to keep students on the right track.

IV "SLEEP, FATIGUE, AND REST"

Listing

This section of your textbook lists many causes of fatigue. Some of the causes are physical and some are mental. Fill in the causes under the appropriate heading.

1. Physical causes of fatigue

   A.
   B.
   C.
   D.
   E.
   F.
   G.

2. Mental causes of fatigue

   A.
   B.

Example IV gives even more help. The first three answers are already completed. This type of assistance encourages the timid student and models appropriate responses.

"RELIGIOUS CHANGE IN WESTERN EUROPE"

Time Order

A time line is an excellent way to see the sequence of events. As you read about the religious leaders, fill in the events on the time line below. Write what happened under the date.

1512 1521 1526 1546 1555 1558

VI "A TIME OF CONFLICT"

Time Order

Religious factions caused by the Reformation triggered a number of religious wars in the 1500's and 1700's. Rewrite the events below in the order they occurred. Place the date of each event beside it.

1. The son of King Charles I was called back to England.
2. The Thirty Years War involved almost all major European countries.
3. Most people in the northern half of the Spanish Netherlands became Protestant.
4. In England, conflict between the king and Parliament led to Civil War.
5. Sweden revolted against the Catholic king of Denmark and declared its independence.
6. The Act of Succession was agreed to by William and Mary.

Examples V and VI suggest two guides for sequencing events from a text. The time line (V) uses exact time frames with page numbers. By contrast, VI

does not provide dates nor page numbers. Obviously, Example VI is geared for a more able reader.

NOTE: Pattern/Study Guides may be expanded to accommodate the type of student for whom it is intended. Pre-reading or post-reading questions may also be used.

LEARNING THE IMPORTANT IDEAS FROM TEXTBOOKS

BOOKTHINKING OPERATIONS

There are relatively few "bookthinking" operations. They can be categorized under four or five headings, and those headings fit a wide variety of subjects--English, math, science, social science, and vocational studies. Students do not automatically learn or apply these major thinking operations; they need help from teachers to see how to transfer thinking skills from one subject to another.

Here are five essential "bookthinking" operations:

1. Having accurate associations for the vocabulary of the topic being read.
2. Recalling significant features or events; for example, who discovered the new serum?
3. Analyzing or manipulating the ideas for a given purpose; for example, to compare the lifestyles of the two main characters.
4. Judging the worth of the passage, or the ideas in it; for example, was it worth reading that chapter?
5. Extending the ideas logically or emotionally beyond the text to show understanding of how to use the ideas; for example, predict what will happen next.

These major categories of thinking about the ideas in books are a kind of mental framework within which an instructor can organize important questions and instructional activities. Also, instructors can aid students to continually refine their abilities to apply these basic thinking operations to every textbook assignment they read.

GRAPHIC ORGANIZERS

A graphic organizer is a visual aid which defines and displays relationships among the concepts contained in any textbook reading assignment. The graphic organizer may be used in a variety of ways. It may be used to introduce a textbook reading assignment. It may be used after textbook reading to reinforce concept learning and summarize important leads. It may be used to test whether learning has occurred. It is an adaptable teaching device that promotes understanding and remembering of the important ideas contained in written materials.

HOW TO CONSTRUCT A GRAPHIC ORGANIZER

Step One-Concept Identification

Identify all new terms and concepts that are in the reading assignment. To save time, simply check them in your own copy of the textbook. The following example is from a science textbook:

Structure of matter
Elements
Compounds
Metals
Nonmetals
Atomic theory of matter
Atoms
Mixtures
Physical combination
Electrons
Neutrons
Energy levels
Electrolysis
Natural elements
Positive electrical charge
Negative electrical charge
Nucleus
Orbits
Law of definite or constant proportions
Chemical combinations
Particles
Protons
Electron shell
Molecule
Inert gases

Step Two-Concept Selection

The initial list must be pruned until only the most important ideas have been selected. Once the list has been reduced to essentials, subclassify the other terms in an informal outline.

Structure of matter

Chemical combinations

Compounds

Molecules

Elements

Natural elements

Metals

Nonmetals

Atomic theory of matter

Atoms

Nucleus

Protons

Neutrons

Electrons

Physical combinations

Mixtures

Compounds

Elements

Step Three-Diagram Construction

Arrange the terms in a tree diagram which reflects the structure created in the previous page.

Structure of Matter

Chemical Combinations Natural Elements Physical Combinations

Compounds Metals Nonmetals Mixtures

Molecules Atomic Theory of Matter Compounds Elements

Elements Atoms

Nucleus Electrons

Protons Neutrons

Step Four-Initial Evaluation

Now that you have created the organizer, step back and evaluate it. Ask yourself this question: "Does it accurately display the concepts and relationships I wish to teach?" If not, "massage" the diagram until you are satisfied. You will find that this process helps you organize and clarify your own purposes.

In addition to accuracy, think about the complexity of the diagram. It may be too complicated and possibly overwhelming to the students. Perhaps you simplify it or perhaps you want to present the organizer in separate pieces.

Step Five-Organizer Presentation

The actual presentation of the organizer can be done in a variety of ways: dittoed handouts, a poster, a projected transparency, or the chalkboard. Use the method you like best. Begin the presentation with an explanation of how a tree diagram works. Then, talk through the organizer with students, explaining each term, encouraging student questions and discussion, and indicating the ways the terms are related to each other.

As you present the organizer in this way, you will be developing vocabulary, improving reading comprehension, and enriching the background knowledge of your students so that the textbook reading assignment will be meaningful and relevant to them.

EXAMPLE OF GRAPHIC ORGANIZERS

POST-RENAISSANCE ARTS

Classicism (1700s)	Romanticism (1800s)	Realism (1850-1920)
fixed patterns	freedom	impressionism
classics	emotion	experimentalism
reason	medieval subjects	contemporary world problems

BIOLOGICAL CLASSIFICATION

Kingdom

Animal

invertebrates

insects

worms

Plant

vertebrates

fishes

amphibians

reptiles

birds

mammals

two legs

man

ape

four legs

mouse

cat

BASIC ELEMENTS OF POETRY

TYPES

Narrative

Lyric

Limerick

DEFINITE FORM

Line of Verse

Stanza

RHYME

Assonance

Consonance

Alliteration

End Rhyme

Internal Rhyme

LANGUAGE

Literal

Figurative

Dialect

Diction

IMAGERY

Simile

Metaphor

Personification

THEME

Idea

Moral

RELATING NEW IDEAS TO KNOWN IDEAS

Everyone has a network of ideas in his/her mind. These ideas are the product of all of a person's experiences. New ideas are learned through association with previously learned ideas. Students need help from content area instructors to relate the new ideas found in any textbook to knowledge already present in the student's minds. The result of this process of relating new ideas to already known ideas is very beneficial to understanding and remembering the new ideas. What follows are descriptions of several ways to promote the relating process.

RELATED QUESTIONS

Related questions are questions which attempt to activate in students' minds ideas which are in some way related to the major ideas in any particular reading assignment. They are posed before students read the text. Asking prereading questions is not a new instructional strategy. Instructors have been using them for the purposes of motivation for a long time. What is new is the understanding that these questions can be designed to activate prior knowledge in students' memories which is crucial to comprehension. First, the strategy will be described; then, examples will be given.

Step 1

Read the selection and pinpoint the major ideas.

Step 2

Develop a question related to the major idea but general enough to encompass a range of student experiences.

Step 3

Encourage brief responses to these related questions. The objective is to activate a mental set, not to encourage prolonged responses.

For example, you may be studying a short story about the inability to forget a childhood memory, such as the tragic death of a friend. Related questions which could be posed prior to reading are:

Do you have certain strong memories from childhood that you can never forget? or,

Have you ever seen something happen to someone else that you could never forget?

In a history textbook, a chapter about events leading to World War II could be preceded by a question, such as:

What kind of problems between nations tend to lead toward confrontation?

For a chapter in a biology textbook about the origin of life one could ask:

How can you tell whether something has life?

In a social science textbook, a chapter about the uses of power in society could be preceded with:

Is there someone in your life that has power over you? and,

Whom do you have power over in your life?

When these related questions are asked before students read their textbook assignments, they are stimulated to draw upon any prior knowledge of the topic they may have. As a result, they are better able to understand and remember the content of the textbook assignment.

SEMANTIC MAPPING

Another approach to connecting ideas present in students' minds with the new information contained in a course and its set of reading assignments is called Semantic Mapping. The procedure goes like this:

1. Choose a word central to a story or unit of information.
2. Write the word on the chalkboard or transparency.
3. Allow some time for everyone to write down as many words as they can think of that are related to the central word.
4. Ask for each student to tell you some of their associated words and you create a master list of all of them on the blackboard or transparency.
5. When you have a master list that everyone can see, ask students to select words in groupings or categories and in a separate area you also write those groupings headed by their category labels.
6. Discussion is crucial to the success of Semantic Mapping. You can lead a discussion of new words, new meanings for known words, seeing "old" words in a new light, and seeing the relationships among words. Be prepared for some disagreement; some words may be appropriate to more than one category.
7. Conclude the discussion by focusing attention on one or two categories mapped from the central concept.

As a result of the discussion, the students will have pooled and shared their collective knowledge. The instructor will have a good idea of how many of the concepts to be introduced in the lesson are known or unknown to the students in that particular group. Finally, Semantic Mapping will have begun the process of connecting unknown concepts with known concepts.

RADAR

RADAR is another technique for making the connections between what students already know and what may be new to them in a textbook reading assignment. RADAR uses analogies to make the connections. The RADAR technique consists of the following steps:

R--READ

In the first step, the students are told of an analogy to the topic in a given section of the textbook. They are instructed to read for the purpose of explaining the analogy. This means that they are to look for ways that the text and the supplied analogy are similar.

For example, "How is the problem of poverty analogous to a low fuel tank?" or "How is the development of the computer analogous to the development of the hamburger?" or "How is the painter standing before an empty canvas analogous to a freshman in college?" or "How is rock music analogous to comic books?"

A--ANALOGIZE

Following the reading step, students are asked to explain the analogous relationship which has been presented to them. They may need encouragement to go beyond simply describing visible similarities and to also describe processes that are similar to both. It may be helpful to begin all responses with a common stem such as, "Rock music is like comic books in that..."

D--DISCUSS

At this point, the discussion should center on the elements of the analogy that fit the concept best and worst. Other topics for discussion might be a) the number of different ways the analogy is related to the

concept, b) the consistency of the development of the analogy, and c) what the details of the analogy added to the understanding of the concept.

A--APPLY

Once the analogy has been firmly established, the class can use whatever insights they have gained to solve specific problems related to the concept being studied. For example, "How can we change a person's taste in music?"

R--RESEARCH

Ideas about the concepts which resulted from the previous four steps of RADAR can be used as sources for research topics. Other research activities might include developing new analogies for the original concept, specific aspects of the concept, or problems related to the concept. Instead of research, at this point, the final step could be review of ideas previously discussed.

Incidentally, it is not necessary that the analogies chosen be directly parallel to the concepts being taught. In fact, selecting analogies that do not readily fit is desirable because students must exert some effort to relate the analogy to the problem, and may discover new ways of looking at problems.

RADAR has been presented as a valuable classroom activity for using analogies to teach new concepts and take new looks at old ones. Through guided practice in thinking this way, students may not only make connections between known and previously unknown concepts but also learn to think in a fresh way which can be applied to any set of ideas they are learning.

VOCABULARY LEARNING

Before Reading the Textbook

Knowing the meanings of the important words of a topic area is essential to understanding what is read. The best way to ensure that college students learn the new vocabulary contained in textbook reading assignments is to have a definite instructional plan for promoting vocabulary growth. Do not rely on the idea that they will pick up the meanings of technical words from merely reading the assignment. It doesn't work that way. It is vital that content area instructors directly teach at least some portion of the new words found in the textbook reading assignment.

It is generally known that experimental learning and visual learning are powerful ways to take in new information. For the instructor, the disadvantage of these approaches is that they require lots of planning time and resources. In contrast, oral discussion and reading of words and their definitions are almost as effective ways to introduce new words but require less planning time and fewer resources. Whichever approach is taken, the critical point is that important new words must be taught before the textbook reading assignment is given.

The textbook glossary and a good college-level dictionary are two basic resources for learning new words. Guide students to develop the habit of consulting these vital resources early in the semester and often.

After Reading the Textbook

Another maxim of learning new words is practice, practice, practice... . In other words, active use of newly learned words is required for full attainment of their meanings.

What follows are some suggestions for reinforcement activities that are designed to engage students in meaningful, enjoyable practice of words that are new to them. These activities focus on the relationships among interrelated terms and allow students to experience new words receptively and expressively. These activities may be adapted in any way that makes sense to you.

LIST-GROUP-LABEL

This activity is a classification technique similar to the Graphic Organizer and Semantic Mapping in the sense that it emphasizes word relationships. It actively engages students in the review process and promotes collaborative learning of new terminology. Following are the four steps.

Step One: Topic Selection

After students have read a unit, select a topic which is related to several sets of related words found in the unit. For example, if you were studying the Civil War, the topic "People and Places During the Civil War" would be a good one.

Step Two: List Procedure

Begin this group activity by writing the topic on the blackboard and telling the students that they will be reviewing important terminology. Ask them for suitably related terms and write them on the blackboard. When you have a sufficient number of words, have the students silently examine the whole collection. The following list is one possibility for our example topic.

People and Places During the Civil War

Georgia	Antietam	Texas
Grant	Pickett	Kansas
Maine	Gettysburg	Iowa
Pennsylvania	Vermont	Goodyear
Lee	Alabama	Burnside
Davis	North Carolina	Howe
Shiloh	South Carolina	Meade
Virginia	Bordon	New York
Mississippi	Vicksburg	McCormick
Ohio	Sherman	McClellan

Step Three: Group Label

Ask the students to reorganize the master list into smaller list of words which have something in common. Each smaller list should then be given an appropriate label. They may work individually or in small groups to do this. Here are some possible groups and labels, for example.

Union Generals	Battles	Inventors
Grant	Shiloh	Borden
Sherman	Antietam	Goodyear
Burnside	Gettysburg	Howe
Meade	Vicksburg	McCormick
McClellan		

Northern States	Southern States	Things Related to Gettysburg
Pennsylvania	Georgia	Pennsylvania
Ohio	Virginia	Lee
Vermont	Mississippi	Pickett
Kansas	Alabama	Meade
Iowa	North Carolina	
New York	South Carolina	
	Texas	

Step Four: Discussion

It is valuable to spend some time having the students explain their classifications. You may discover that there are several valid ways to group the same master list of words. While some students explain their rationales, others can comment on the accuracy and completeness of the lists. The instructor, of course, may comment, ask leading questions, and suggest alternatives as appropriate.

CLUES AND QUESTIONS

This procedure is designed to help students review vocabulary. What makes it interesting is the fact that students provide both the questions and the answers.

Step One: Selecting Words

The instructor selects the vocabulary to be reviewed and writes each word on a notecard. The cards are placed in some kind of box from which each student picks several cards at random.

Step Two: Writing Questions

Students write questions whose answers are the words on each card. They may need to be guided to the index at the back of the textbook where they will find citations of their words. Also, the instructor should provide examples of different kinds of questions and clues, e.g., definition, analogy, comparison-contrast, context. When the questions are written and checked by the instructor for clarity and accuracy, the student may print them on the card directly below the word. For example:

Molecule

1. _____ is to "compound" as "atom" is to "element".
2. What is the smallest unit of a compound which retains all the characteristics of that compound?
3. Two hydrogen atoms and one oxygen atom make one _____ of water.

Step Three: Reviewing Words

When all the cards have been completed, the class is divided into small groups with each group having a portion of the vocabulary cards. Without looking at the front of the card, one student shows a card to the others in the group. Each of the other students asks a question or supplies a clue

until the word is identified by the student holding the card. When all the cards have been exhausted, groups exchange cards and continue the procedure.

As a vocabulary builder, Clues and Questions has several strengths. When students create the questions, they have to actively think about the words. They can refine their thoughts and communication ability when writing clear, meaningful questions. Finally, the review activity itself will enlarge and reinforce each students' technical vocabularies.

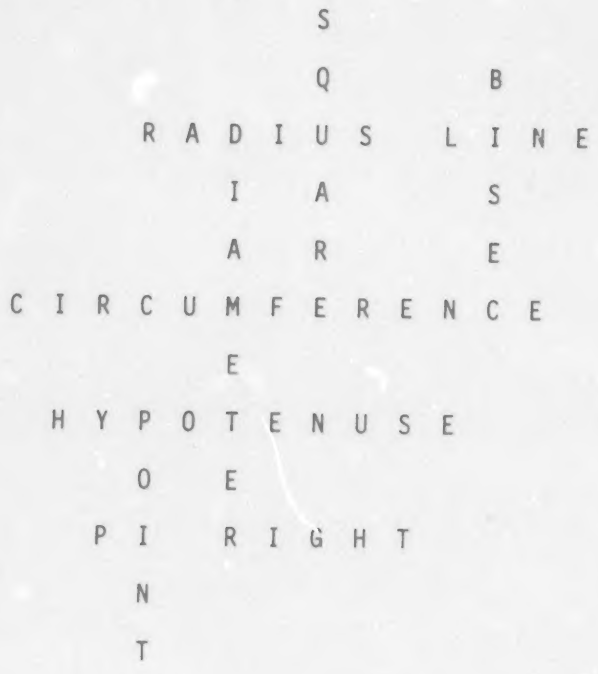
CROSSWORD PUZZLES

Crossword puzzles are enjoyable vocabulary review devices. They are somewhat difficult to make because of the need to plan crossovers and draw boxes. The following steps will simplify the procedure of creating a crossword puzzle on a ditto master.

1. Select vocabulary and plan crossovers.
2. Place the ditto in a typewriter leaving in the protective paper.
3. Type in the answers, triple spacing between letters in rows an double-spacing between letters in columns.
4. Take the ditto out of the typewriter and remove the protective paper.
5. Use a ruler, draw boxes around the words.
6. Draw in numbers by hand or reinsert the ditto and type them in the upper left corner of the appropriate boxes.
7. If the lines become overextended, cover them with correction fluid.

(see next page for example)

For example,
Crossword Puzzle: Geometry Terms



Across:

3. A line running from the center of a circle to the curve
5. An infinite number of points
6. The distance around a circle
7. The longest side of a right triangle
9. 3.14
10. A triangle with two sides perpendicular to each other

Down:

1. A figure with four equal sides and four right angles
2. To divide into two equal parts
4. Twice the radius of a circle
8. Two of these are enough to determine a line

SCIENTIFIC/TECHNICAL READING

Introduction

Scientific/technical writing has characteristics which require specialized reading skills. For example, this type of writing has a very terse style and the factual content is very dense. In order to pay careful attention to the concepts, details, and generalizations, the reader must read very slowly. Getting exact meaning is important. Nothing can be skipped. In order to successfully read in the sciences and technical areas, students must learn the appropriate vocabulary and be able to follow the patterns of writing used to structure scientific/technical material.

Vocabulary

In addition to vocabulary learning techniques described in other parts of this handbook, students will need to be guided to apply systematic methods of building their scientific vocabularies. What follows are three suggestions for vocabulary building in scientific/technical areas.

1. Key Roots and Affixes - Many scientific words contain Greek and Latin roots and affixes. The advantage of learning these word parts is that whenever the student comes across a new word containing these parts, he/she can usually discover its meaning without consulting a dictionary. You will find lists of frequently used roots and affixes in the Appendix of this handbook.
2. Vocabulary Cards - Scientific technical vocabulary is important enough to understanding written material that creating a collection of vocabulary cards is a well-spent effort. This activity could easily be part of the requirements of any course.

Creating the Cards - On one side of the card, the word and its pronunciation are written. On the other side, one can put the definition, a synonym, possibly an antonym, and perhaps a sentence containing the word to be learned. But the work doesn't stop at this point.

As the collection of cards builds to 15 or 20, they can be reviewed for about 10 minutes daily. The word should be said aloud for review at any spare moment. The idea is to overlearn them.

As 50 to 100 cards accumulate, the well-known ones can be put aside and new ones added. Also, they can be kept in separate stacks according to topic.

3. Specialized Vocabulary Books - Particularly if the textbook does not have a glossary, the books listed next may be used as resources to develop scientific/technical vocabulary:

Foster, John, Jr. Science Writers Guide. Columbia University Press, 1963.

Gaynor, Frank. Concise Dictionary of Science. Littlefield, Adams, & Company, 1964.

Speck, G.E. and Bernard Jaffee. A Dictionary of Science Terms. Hawthorn Books, Inc., 1965.

Patterns of Learning

The common patterns of writing found in science textbooks include classification, experiment, explanation of a technical process, detailed statement of facts, cause and effect, and the problem-solving pattern. Knowledge of these patterns will facilitate understanding scientific/technical writing in textbooks. What follows are descriptions of each scientific/technical pattern of writing and examples of relevant assignments to reinforce reading comprehension and remembering.

CLASSIFICATION PATTERN

The classification pattern is used to group and subgroup various things, objects, or areas. This pattern can be used to remember a large number of small pieces of information. It is an easy and familiar pattern to recognize. Identification of the classification pattern can help sort out the major and minor facts being presented.

Here is an example of a textbook reading assignment which emphasizes the classification pattern:

Assignment Sheet

1. What is being classified?_____
2. What are the major subdivisions in the classification pattern?_____
   _____
3. Using the answers to questions 1 an 2, fill in the following diagram:

   _____

   _____ _____

4. What are the four types of (your technical term here)?
   a. _____
   b. _____
   c. _____
   d. _____
5. Complete the following classification diagram for the selection you have just read.

   _____

   _____ _____

   _____ _____ _____ _____

Experiment Pattern

Experiments are the basis of scientific knowledge and advancement. The reader must be able to read the experiment directions and translate these into action. The directions must be carried out precisely and the outcome observed carefully.

Following are the steps a reader should use when reading an experiment:

1. Ask the following questions:
   a. What am I to find out?
   b. What materials are needed?
   c. What processes are used?
   d. What is the order of the steps in the experiment?
   e. What do I expect to happen?
2. Perform the experiment.
3. Observe the experiment.
4. Compare the outcomes to predicted outcomes. (Success or failure of an experiment is determined by the learning that takes place.)

Explanation of a Technical Process Pattern

A process description provides an order or sequence. It is a system which is easier to remember than a collection of separate bits of information. The process explained may be a biological process, like the digestive process, or it may be a technical process, such as how an engine operates. Diagrams usually accompany this kind of pattern, so the reader must fuse text information with the diagram information in order to understand the process.

Techniques that will help students understand the explanation of a process are as follows:

1. Have them restate the explanation in their own words.
2. Have them fill in the missing steps of a sequence.
3. Give the students an unlabeled diagram to label in order to illustrate the process.

Detailed Statements of Facts Pattern

The detailed statement of fact pattern usually provides a definition or a statement of a principle. Information is usually very dense in this pattern. Understanding the information in this style of writing is usually necessary for development of basic scientific ideas. Later concepts will be built upon these detailed statements of facts. This style of writing requires a very slow rate of reading and rereading as often as it takes to grasp the concepts. The following technique may be used to help students understand this pattern of writing:

Assignment Sheet

1. What major term is being defined?_____
2. Define it._____
3. What observed facts are used as examples of the term?_____

   _____
4. What minor terms associated with the major term are being defined?_____
5. Define them._____
6. What observed facts are used as examples?_____

Cause and Effect Pattern

Scientific experimentation and technical processes alike are commonly concerned with describing cause and effect. Following are some examples of an instructional technique for emphasizing the cause and effect pattern of writing.

Cause and Effect Study Guide

Directions: Read the selection to identify cause and effect relationships. Place effects in one list and causes in another. With a partner, read aloud to relate each cause and effect. Then place letters in the correct blanks below.

Effects

a. firmness of plants
b. seeds develop
c. growing of embryo
d. pollinated by bees
e. plant dies

Causes

____1. Pistils receive pollen grains
____2. Supply of food in endosperm or cotyledons
____3. Cellulose
____4. Vascular systems does not receive nutrients
____5. Brightly colored sepals

Problem-Solving Pattern

This pattern is used in scientific materials in which the author describes a real or hypothetical problem and its actual or suggested solution. For example, a writer might use this style to explain how a vaccine was developed for polio. In a way it might be considered as a history of scientific experimentation. Assignments such as the following will help students understand the problem-solving writing pattern:

ASSIGNMENT SHEET

To check your comprehension of the passage, answer these questions:

1. What was the question (problem)?_____
2. What observations were made to obtain the answer?_____

   _____
3. How do we know that the question was answered?_____

   _____

THE READING ASSIGNMENT

GIVING THE READING ASSIGNMENT

The reading assignment must have a purpose. This purpose is related to the objectives of the course and the needs of each student.

The ideal reading assignment comes as the results of that day's lesson. It must be specific - that is, it must deal with a topic, concept, idea, philosophy, process, genre.

Students must know that sufficient materials are available, "Sufficient" here refers to alternative/supplementary material.

In addition to the textbook, other materials might be filmstrips, workbooks, manuals, transparencies, tapes/cassettes, supplementary books (lower level), movie, computer-programmed lessons.

An important step that is often overlooked is the cooperation between teacher and students. The success of the assignment depends on the extent to which the student can see a profitable learning experience with the class as to 1) what is to be read, 2) what materials are available, 3) why the assignment must be done, 4) how it may be done, and 5) when it is too be completed is vitally important. One very successful way of getting students prepared and involved in the impending reading assignment is to set a purpose. Ask them to list several questions they would expect to be answered. Add questions of your own to demonstrate the need to use questions that will elicit answers at varying levels of comprehension.

The following assignment form may be helpful in planning and giving the reading assignment.

Assignment Planning Form

I. What is to be read? (specific topic, chapters, pages)

_____

_____

A. Purpose setting questions? _____

_____

_____

II. Available Material:

Text (pages, chapter, filmstrips, cassettes, manuals, articles, movies, programmed lessons, Workbook)

Advanced students _____

Average students _____

Slower students _____

III. What alternate activities sources are acceptable? project? Research/Term Paper? etc?

_____

_____

_____

IV. Date of Completion of assignment:

Part I (if any) _____

Part II (if any) _____

Final _____

READING ASSIGNMENTS IN SUBJECT AREAS

Social Science: Many texts of social science present facts in sequential order, topical order, order according to movements that are social or regional, or theoretical order. The student must be familiar not only with the organizational pattern, but must also use analytical and critical reading skills.

The main reading skills essential to understanding social science are 1) reading for main ideas, 2) identifying supporting facts, 3) interpreting charts, tables, maps, graphs, 4) locating and organizing information for reports, 5) detecting bias, 6) distinguishing fact and opinion, and 7) drawing conclusions.

The following suggestions may be of help in giving the reading assignment in Social Science:

1. Review with students what has already been covered and relate this to the reading assignment.
2. Discuss what students already know about the assignment in their own words.
3. Find out what information about the reading assignment is already known by the students.
4. From this, help the students formulate questions about the assignment that will set a "purpose" for their reading.
5. Go over any new vocabulary or concepts that will be encountered in the reading assignment. (Be sure to discuss the vocabulary in context.
6. Have students use the "survey" step to get an idea of what the reading material will cover. This may result in additional purpose-setting questions (#4 above).
7. Students should begin reading to find answers to their questions.
8. Discuss findings-be flexible in allowing students to express in their own words the ideas they gathered from the reading.
9. Ask questions of students that will elicit inferences and require them to draw conclusions.

10. Questions that are still unanswered at the end of the reading assignment can generate further reading if warranted.

11. Read from other sources any relevant information about the topic of the reading assignment.

12. Share and suggest supplemental books/sources where students may find additional information.

Science: Science texts are concepts oriented with emphasis on cognitive learning. Because of the nature of science subjects, writers usually provide highly structured chapters that utilize sub-headings, italics, marginal notes, illustrations, scientific glossaries, chapter introductions and summaries. This organization lends itself to the various study techniques (SQ3R, OARWET) mentioned previously that help students comprehend and retain information.

Much of the reading of science texts requires the student to pick out main ideas and the supporting data (details). Being able to recognize and follow sequential precesses requires the student to understand general word groups as well as specialized vocabulary in isolation and in groups. Laboratory courses use directions that must be executed in sequence. Many times work sheets that accompany lab exercises require that the student follow step-by-step certain procedures. Drawing inferences and making tentative conclusions are additional reading skills required of readers of science.

Some suggestions on giving the reading assignment in Science are:

1. Survey each chapter prior to reading. (This should be a class activity until students become independent in carrying this step out.)

2. Discuss which study technique would be more appropriate to use with the particular assignment.

3. Discuss any new vocabulary for the assignment.

4. Help students generate several "purpose setting" questions.

5. Be sure to point out to students any illustrations that support the text. Make it clear that these should be studied carefully.

6. Have students discuss what they already know that relates to the reading assignment.

7. Read to find the answers to questions (#4 above) and to generate additional ones.

8. Discuss the findings as a result of the reading and ask questions that will force them to make inferences and draw conclusions. (Even if conclusions are tentative, this is good practice in higher-level reading/thinking skills).

9. Be sure to provide alternate sources where students might get additional information.

Mathematics: Most math texts are written in a structured format that makes effective use of the study techniques mentioned earlier. The math text usually utilizes sub-headings, definitions, visual aids, bold and italicized print, chapter introductions and numerous examples.

Students find that they must adapt their rate of reading (usually requiring them to slow down) for the more exacting type of reading demanded in the math text. Mathematics reading, generally, is approached much like any study-type reading that requires reasoning while reading. Because math texts use word problems that are precise and succinct, students will not find contextual clues to aid their comprehension. They will have the task of understanding each word, phrase and then relating them to the entire problem.

Graphs, Charts, Tables: To help students comprehend these visuals common to the mathematics texts, it might be helpful if the instructor uses the following suggestions:

1. Have students read the title to find out exactly what is shown (or compared).

2. Make sure that students know what the symbols represent.

3. Read any labels pertaining to each axis and decide how they relate to the overall visual.

4. Be sure that students know what is being asked (this refers to the problem).

5. Help the class draw conclusions based on the visual as a whole.

Word Problems: Many students have difficulty with word problems because of one or both of the following reasons: a low reading ability, inadequate knowledge of mathematical processes (vocabulary, symbols, punctuation). Obviously, a problem in either of these will result in difficulty in understanding and solving word problems.

Some suggestions in helping students with mathematical problems are:

1. Students must read the problem thoroughly. (To be sure that this is done properly, the instructor should take time to read or have students read the problem aloud.)
2. Point out words that are essential to the operations required to solve the problem.
3. Devote time helping students understand the terms that indicate certain operations or processes in the math problem.
4. Have students verbalize what the problem is asking them to find.
5. See if students can relate the problem to one they have done before. If this is the case, they should be able to see the similarity of procedure and the operations between the two.
6. Ask students to state what they must know in order to solve the problem.
7. See if any student can estimate the answer. (This gives the instructor an idea of how well they understand the problem.
8. Have students solve problem step-by-step and see how close their estimation comes to the actual answer.

TEST TAKING GUIDELINES

TEST TAKING STRATEGIES

From the Study Strategies mentioned earlier, the student should be able to prepare for course exams. The "Question," "Ask" steps the student should have some good questions from each chapter to use in self-quizzes in preparation for the real test. These will help the student anticipate information that is likely to be covered on the test.

Some general suggestions on test-taking are:

1. Make sure you are prepared physically - well rested, have had a light, nutritious breakfast.

2. Be confident that you have reviewed the classwork that is to be included on the test. This includes asking the instructor questions about the type of test.

3. Avoid clusters of students who engage in "last minute" cram sessions. Anxiety and tension are normal but these sessions can heighten tension to an uncontrollable level.

4. Come to the test with all materials such as pens or pencils, erasers, watch or other items necessary.

5. Find out if all items have the same point value. This can help you determine which ones to answer first and which to leave for later.

6. Read all instructions carefully and thoroughly. Ask for clarification on anything that is not clear.

SUGGESTIONS ON HOW TO ATTACK DIFFERENT TYPES OF EXAMS

Multiple Choice Exams

1. Read the basic question through carefully and try to answer the question without referring to the choices given.

2. Read all choices, then choose the best answer.

3. If the correct answer is not immediately clear to you, try the process of elimination.

4. Always choose the broader answer when several choices may seem correct.

5. Be aware of and use grammatical clues (i.e., singular and plural forms a and an) when choosing your answer.

6. Don't spend too much time on any question. Finish the test and then come back.

7. Do change an answer if you feel you see a better choice.

8. If you are being graded "right-minus-wrong", DON'T GUESS!

True-False Exams

1. Theoretically, the entire item must be correct in every respect or it is wrong. Don't expect or look for "tricks".

2. Base your responses on in-class discussion or textbook information.

3. Be aware of "usually," "probably," "always," "never," or "generally," "most often," etc. when choosing your answer.

4. Again, do change an answer if you feel certain about the other choice.

Completion Tests

1. Be aware of and use grammatical cues (i.e., singular and plural forms, a and an) when choosing your answer.

2. Consider other clues, such as length of blank, number of blanks, number of dashes may signify the number of letters in the answer. (Always check your instructor to see if these cues are intended).

3. Write answers legibly! This is not the time to make professors guess your answers.

Matching

1. Read both columns carefully, then match pairs you're sure of.

2. Find out if items can be matched more than once. (Read instructions! Ask your instructor if written directions are not clear.)

3. The process of elimination should be applied for remaining items you are uncertain of. (This only works if items can be matched only once.) Be sure to cross out "used" answers so you don't waste time rereading them.

Essay

1. Try to determine whether the essay is asking for main ideas or specific details.

2. Begin with what you feel is the easiest question. Building up your confidence can't hurt.

3. First outline the main points you wish to cover so you don't forget any as you begin to write.

4. Write legibly.

5. Write something on all questions. If you run out of time or are uncertain of the answer, jot down a brief outline of what you planned to say anyway. Nothing ventured -- nothing gained.

6. Don't "bluff." Obvious, off-the-track responses are a waste of your time, as well as that of your instructor and won't earn you any points.

7. Budget your time. Make sure you spend more time on the questions with a higher point value.

8. Pay attention to the direction words such as "analyze," "elaborate," "list," "compare," "evaluate," "explain," "illustrate," "outline," "define." (See Key Question Words (for essays) in the Appendix.)

9. Go back over your answers -- adding details, etc. Reread the questions to make sure you have followed the "direction words" in answering.

Math Exams

1. Read the question carefully. Each word or symbol is critical in a math problem.

2. Decide which operation(s) (i.e., adding, dividing, etc.) is/are called for.

3. Work the problem.

4. Always go over your work to see if you've made careless errors or if your answer if unreasonable.

Standardized Test - Timed Tests

1. Be sure you read and understand the instructions for each section.

2. Read all possible answers.

3. Don't quarrel with a question and waste time.

4. Don't waste time making "artsy" wiggles on the answer sheet - one firm dash will do.

5. Don't be upset if you don't answer all the questions. Few people do.

6. Standardized tests call for sustained drive! Two (2) or three (3) more items answered can make a great difference in the total score.

CLAST

COLLEGE LEVEL ACADEMIC SKILLS TEST

The CLAST is an achievement test of communication and computation skills expected of college students by the time they complete the sophomore year.

Community college and university faculty agreed that the following reading skills are to be measured by the CLAST:

Determining the meaning of words
Recognizing relationships within and between sentences
Recognizing main ideas
Identifying supporting details and facts
Recognizing the author's purpose
Recognizing valid arguments
Detecting bias
Distinguishing between fact and opinion
Drawing inferences and conclusions

While these skills are covered in the 1105 College Reading Course, they should be incorporated in all content reading assignments where possible. Reinforcing these skills across the curriculum will help our students become more efficient readers which should be evident by better performance on CLAST.

DETERMINING THE MEANING OF WORDS

Content - The meaning of a word (word meaning) can often be determined by the way it is used in context. The author provides clues or hints to help the reader figure out an unfamiliar word:

HOW TO USE SENTENCE HINTS FOR WORD MEANINGS

Hint	Example	Explanation
Some sentences give the definition for a word by means of punctuation.	Origami - Japanese paper folding is family fun.	Dashes-, parenthesis (), brackets []. difficult
	The addas, a large pale-colored animal much like the antelope, has two spiral horns.	Commas
Sometimes helping words, along with punctuation, provide important clues.	Mary felt perturbed; that is, she was greatly disturbed by her sister's actions.	Helping words: that is, meaning, such as, or, is called.
Some sentences tell the opposite of what a new word means. From its opposite, you can figure out the meaning of the word.	Parents who constantly spank their children can hardly be called lenient.	If you are lenient, you do not often punish your children. Merciful or gentle would be a good guess for the meaning of lenient.
Sometimes you can use your own experiences to figure out the definition of a word.	The cacophonens rattling made Maria cover her ears.	A noise that would make you cover your ears would be unpleasant or jarring.
Sentences before or after a sentence containing a difficult word sometimes explain the meaning of the word.	Mozart gave his first public recital at the age of six. By age thirteen, he had written symphonies and an operetta. He is justly called a child prodigy.	It would certainly take a remarkably talented person to do these things. An extraordinary person, would be a prodigy.

Hint	Example	Explanation
Some sentences are written to give the definitions of difficult words - words that readers will need to know in order to understand what they are reading.	One of the remarkable features of the Nile Valley is the fertility of the soil. This rich earth that supported plant growth made it possible for Egyptians to thrive in a dry region.	The second sentence, which tells you that the soil was rich and that it supported plant growth, explains fertility.
Because some sentences give examples for a new word you can build a definition.	Select a periodical from among the following: PLAYBOY, TIME, READER'S DIGEST, or SEVENTEEN.	The sentence doesn't say a periodical is a magazine, but you can figure that out easily from the examples.
Some sentences use a word you do not know to help explain a word you do not know.	A formidable enemy is one to be feared.	Formidable - through the clues in this sentence - means fearful dreadful.

Word Parts - Some words that are new to you may contain groups of letters that have meanings you can learn. The groups of letters may help you figure out an unfamiliar word. These groups of letters or Word Parts are commonly called prefix, root, or suffix.

i n t r o s p e c t i v e

(prefix) (root) (suffix)

"within" or "inward" "lock" "in tend to"

Knowing the meaning of these word parts will lead you to the meaning of the word "introspective." In an exact sense, the word means "to tend to look within." An introspective person is one who looks inward and examines their own feelings and thoughts.

Here are some key prefixes, roots, and suffixes. Learn them and you will gain some idea of the meanings of many words without having to look them up in a dictionary.

Important Prefixes

These prefixes all mean, in some way, "no" or "not."

Prefix	Meaning	Example
a	not	amoral
in	not	insensitive
im	not	immobile
non	not	nonreturnable
mis	wrongly	misdirected
mal	badly	malformed
anti	against	antisocial
ir	not	irresponsible
un	not	unattractive

These prefixes deal with numbers, one or more than one.

Prefix	Meaning	Example
uni	one	unicycle
mono	one	monologue
auto	self	autograph
bi	two	bifocal
tri	three	tripod
poly	many	polygon

These prefixes all deal with placement.

Prefix	Meaning	Example
ab	away from	abnormal
circum	around	circumscribe
com	with, together	committee
de	down from	deceit
dis	away	discharge
ex	out of	expel
inter	among	intertwine
per	through	perceive
re	again	revoke
sub	under	submarine
super	above	superior
trans	across	transition

Important Roots

Roots	Meaning	Example
cred	believe	credence
equ	equal	equate
fac, fact	do, make	factory
mis, mit	send	missile
mor, mort	die	mortify

Roots	Meaning	Example
nomen	name	nominal
port	carry	portable
pos	place	position
spic, spec	look	spectator
tang	touch	tangible
vid, vis	see	visible
voc	call	evoke

Important Suffixes

Suffix	Meaning	Example
able	able to be	manageable
ible		defensible
al		regal
ance	relating to	resistance
ence		independence
ic		heroic
ion		union
ism	state of,	patriotism
hood	quality of	brotherhood
ity		legality
ment		puzzlement
er		writer
or	one who	advisor
ite		Israelite
y	full of	soapy
ful		wishful

RECOGNIZING MAIN IDEAS

A paragraph is a group of sentences about some related idea or subject. As you read a paragraph, you look for the key idea that each sentence presents. Add these ideas together and you will see that each sentence helps build the basic idea that all the sentences are related to. This basic idea is called the Main idea. It is the point or understanding the author wants the reader to get from his reading.

To help reach the main idea of a paragraph, learn to ask and answer the following questions about a paragraph you are reading. You will see that each question leads toward the main point (idea).

1) ASK: "Who or What is being talked about?"
(The answer to this question is the Topic or Subject)

2) ASK: "What are all (or most) of the sentences saying about the Topic or Subject?"
(These sentences are the supporting Details or Facts)

Now that you know what the paragraph is about - the Topic or Subject and the details that support that Topic or Subject,

3) ASK: "What does the writer want me to understand about the Topic?", or put another way...

"What point is the writer making about the Topic?"
(The answer to these last two questions is the Main Idea.

This main idea can appear anywhere in a paragraph. It may be stated at the beginning, in the middle or at the end of the paragraph.

Sometimes the writer does not write a main idea sentence. When this happens, we say the main idea is implied or suggested. The reader must ask the three questions listed above and state the main point in his/her own words.

Denotation and Connotation - So far we have looked at the denotation of a word - that is, what the word literally means.

Many words, however, have another kind of meaning - the implied or suggested meaning based on how it is used. This is what is meant by connotation.

female - a member of the sex that bears young
woman - an adult female human being
girl - a human female who is not yet a woman
lady - a woman with refined habits
chick - a slang word for a young woman

Writers use connotations to make a point and the reader must be aware that the choice of one word over another can influence your thinking and feeling when you read.

RELATIONSHIPS IN SENTENCES

Recalling the four paragraphs patterns, we can see that the author's ideas are related to each other through the use of clue/signal words. He may simply list examples of what he is talking about, he may show how one or more events cause another event (or one or more events happened as a result of some event(s). The author may compare (show similarities) two or more things of contrast (show differences) between two or more things. Sometimes sequencing (putting events, steps, etc. in time are) may be used.

The Structure Words listed in the section "Text Pattern/Study Guide" and "The Author's Guide Words" are important to learn because they relate ideas within sentences. Note in the following examples how the clue word(s) and punctuation "tie-together" the ideas. They (clue words & punctuation) signal to you what the relationship is and that the relationship should be learned and remembered.

Simple Listing

> EXAMPLE: "When buying a house, you should consider several factors. First, you should consider... Second, keep in mind... Next, and finally, the overall up keep of the house..."
>
> EXAMPLE: "In our society, prisons serve several purposes. They are used to punish the criminal..., to protect the general public, to serve as a deterrent and to rehabilitate..."
>
> EXAMPLE: "When trying to persuade someone, you must maintain eye contact, use appropriate gestures, vocal inflections should emphasize important points and ..."

On a test, the questions for a simple listing pattern would use words such as "list", "state", "enumerate", and "give". You should be able to note the main ideas and give the details that support the main idea. These do not have to be remembered in any particular order.

Sequence/Time Order

Sometimes, remembering the supporting details is not enough. You may need to remember details in the order in which it is presented. Usually, the main idea will use phrase like "the steps in," "the procedure...". The details will be those "steps" or "procedures."

> EXAMPLE: "The SQ3R Study Method is an effective tool in helping you read and study efficiently. First, survey the reading. Second, question your knowledge of the topic. Third, read thoroughly. Next, recite or write key ideas, and finally, review. If you follow this procedure, you should improve considerably understanding what you read.

> EXAMPLE: "Life began in a tumultuous way for Alexander. As an infant in 1862, he traveled the seas extensively with his family. When he was two years old, Alexander's mother died leaving him and two sisters with the young father. By the time Alex was 12, he was wise to the ways of the sea and of life. His older sister died during one of the family's journeys from England and when they arrived in Charleston, the family numbered only three."

> EXAMPLE: "When preparing a research paper, you first need to define the topic. A refinement of this topic is next so that it is specific enough for you to gather information. After that, determine the objectives of your research paper followed by the specific information desired. Next, determine the most appropriate source for the information. Now you are ready to proceed with the task of gathering the information related to your topic..."

Always watch for time order/sequence signals as you read. They are clues to the order in which events happened in the sentence.

On tests phrases such as "List the steps...," "Arrange the following in order," "What happened first...", "Trace", and "Develop" are frequently used to check whether you remember the order in which events occurred.

Cause - Effect

When one event leads directly or indirectly to another, we say it is the "Cause." The event that it "causes" is referred to as the "result" or "effect." As a student you need to remember, the reasons for or the results of some event.

EXAMPLE: "The emotional effects of divorce on the child appear much greater than previously realized. The child may develop feelings of insecurity because of the loss of one parent. Often the child will blame himself for the problems of the parents. Feelings of guilt and resentment may be strong thus, requiring outside help from friends, physicians, counselors or other relatives.

EXAMPLE: "Criminal law essentially addresses acts as offenses against the community. On the other hand, civil law deals with offenses against the person. Criminal prosecution is initiated by the State and the punishment is exacted on belay of the State. Civil prosecution is initiated by the person alleging harm, and judgment is rendered on that person's behalf. Judgment is a criminal case usually involving imprisonment, fine or execution whereas judgment in a civil case involves an order to stop some behavior, a fine, or to compensate the injured person."

EXAMPLE: "Objective and essay tests require different skills. Objective tests require you to know a wide range of factual material. The more details you know about a certain subject, the better prepared you are for multiple choice, completion, true-false, and matching questions.

However, essay tests require more than mere recall of facts. You must be able to analyze and present your analysis in a logical fashion that will include specific and general facts. Essay tests stress organization, interpretation, discussion and evaluation of ideas that show the student's grasp of knowledge on a particular subject."

When studying note comparisons and contrasts so that you can anticipate test questions. Instructors often use phrases like "Show the differences...," "How are these the same," "Compare," "Contrast," or "Distinguish between," to find out if you know and understand the important relationships of similarities and differences.

IDENTIFYING SUPPORTING DETAILS AND FACTS

Facts and details help develop the main idea of a paragraph. These facts and details help paint a more complete picture to help you understand the writers points.

Some suggestions on how to locate supporting details and facts are:

Fact Finding

To find and remember important facts, you must be an active, aware reader. Here are nine ways to locate facts:

** Have a definite purpose for reading. Are you reading a page of your biology book to find out how the eye works? Are you reading a chapter of a political science text to learn the meaning of democracy? Or do you read only because an instructor made an assignment? Are you reading the newspaper out of general interest or for a specific research project?

** Learn to read the main idea. If you recognize the main idea easily, the facts to support that idea will stand out.

** Know that all facts and details are not equal in importance. Look only for the facts that relate to the main idea.

** Look for information in groups or units. Facts often appear together in clumps.

** Look for the way the paragraph is put together. How is the information arranged? Has the writer organized the material in terms of a pattern that is easy to see?

** Learn to keep an author's opinions apart from the facts offered in the writing.

** Question yourself as you read. Stop to think and to let facts sink in before you rush on to other information. Ask yourself, "What does that mean?" or "What does that information tell me?" or "Why is this information here?"

** Use the five W's when you read in order to ask yourself specific questions about the facts.

1. Ask yourself "Who?" Then look for a name of someone or something.

2. Ask yourself "When?" Then look for a date (a day, a month, a year) or a time of day or year.

3. Ask yourself "Where?" Then look for words that show a location or name a place.

4. Ask yourself "What?" or "What happened?" Then look for some action.

5. Ask yourself "Why?" Then look for an explanation of some act or event.

RECOGNIZING THE AUTHOR'S PURPOSE

An important ingredient in critical reading is to be aware of the writer's technique. When you recognize what the writer is doing with his/her material, you can make decisions about what is said more clearly.

Purpose

Writers write for a reason. Some wish to give information. Some want to persuade you to believe something. Others try to push you into taking some action related to a subject of deep meaning to them. Some writers write to amuse or entertain.

Advertising is a good example of writing with a purpose - that is, writing to make you buy a certain product. Another example is editorials in newspapers. Editorials aim at gaining public support for a political position.

RECOGNIZING THE AUTHOR'S TONE

Tone is the attitude the writer takes toward a subject. Authors may write about something they respect or about something they hate. A writer may be angry. A writer may be impatient. A writer may take a humorous view of a subject. Or a writer mat be ironic--saying one thing but really meaning the opposite.

Oscar Wilde was asked by a judge during his trial, "Are you trying to show contempt for this court?" and Wilde replied, "On the contrary, I'm trying to conceal it." The tone of his response was much more effective than if he had said, "Yes, I am." The irony made his contempt appear much stronger, so strong that Wilde appeared not to be able to restrain it.

RECOGNIZING VALID ARGUMENTS

Writers sometimes will try to convince you to share their opinions by presenting various facts or evidence. As a mature reader you must carefully decide whether to accept the writer's opinion or argument. The following questions will help you to evaluate the argument offered in support of any opinion you find expressed in your reading.

- Can the facts be trusted?
- Are the facts given in an objective way?
- Do the facts really support the ideas being expressed?
- Have unfavorable or negative points been omitted?
- Do the facts support the argument, or do they only suggest that the argument is reasonable?

DETECTING BIAS

Sometimes writers use a technique that distorts or twists the truth. This is done when the purpose of the writing is to force the reader to act or think in a certain way. Writing that deliberately leaves out or alters facts in order to force a certain point of view is called biased.

** Look out for words used for emotional effect: commie, liberal, pinko, John Fircher, queer, activist, hippie.

** Look out for words that have special connotations.

** Try to recognize the following methods of propaganda.

1. The writer tries to combine a famous person's name with an idea so that people, liking the person, will like the idea, too.

   Reggie Jackson plays the field in Murjani jeans.

2. The writer quotes a famous person who approves or or agrees with an idea so that the reader will approve of it, too.

   Jacques Martin, the famous French chef, says, "Margarine is just as good as butter." Why are you still using butter?

3. The writer says that everyone is doing something (or thinking in some way) so you should do it, too.

   Every farmer, every hard-working city man knows the dangers of the welfare system.

4. The writer uses very positive words in regard to an idea so that only general statements appear.

   Every driver loves this stunning, efficient, and completely safe automobile. Add a bit of sunshine to your life - take a ride in a glamorous, high-fashioned car!

5. "Stacking the cards" is a technique whereby the writer presents only facts that tend to make you agree with him.

   There's nothing wrong with drinking before driving. Not one person at our party was hurt on the way home and believe me not too many people there were sober!

6. The writer use bad names about a person or product.

   Only a nitwit like Lorna would buy a Japanese car. Those things look like wind-up toys.

DRAWING INFERENCES . . .

Drawing inferences requires the reader to use hints to gather information. The reader must go beyond surface details and "read between the lines" to make logical decisions. Because the writer does not always state information in exact terms, the reader is left having to supply his/her own information to the hints or suggestions. While the reader can't always be certain that his/her inferences are 100% right, he can be fairly sure about some things if we follow hunches that are based on solid ideas.

Building Inferences Skills

** Try to read beyond the words. Fill in details and information based on the writer's suggestions.

** Question yourself as you read. Supply the answers on the basis of the writer's hints and your own experience.

** If a writer describes a person, try to understand the person from how she moves, what she says, what she looks like. You can infer things about a person's character from the way she behaves. Try to build a picture of the person in your mind; base your picture on the writer's description of action and appearance.

** If a textbook or a teacher asks a question you cannot answer easily from what you have read, remember to use inference. Return to the part of the reading where you expect the answer. Then see if the writer suggests something that you yourself have to supply in clearer terms.

. . . CONCLUSIONS

To draw accurate conclusions, you must put together facts and details logically in your mind. You have to think ahead to events or ideas that might come from information the writer gives, information that forces you to predict how things might come out. Even though you might not know for sure, you have to use evidence you find in your reading to forecast what will happen.

How to Form Conclusions and Predict Outcomes

** Be sure you know the main idea of the selection.

** Be sure you understand all the facts or details that the writer gives to support the idea.

** Check on difficult vocabulary.

** Look out for the logic of action. Did you follow the sequence? Did you put events together in the right order of time or place to help you predict what would happen?

** Look at the way characters are described. Can you tell from their personalities - from the way they think and feel just how they might act?

** Ask yourself after you read: what will happen as a result of these actions or events?

** Be careful to build your conclusion on evidence you find in what you read and not on your own opinions, likes, and dislikes. Of course, you need to use your own experience to help figure out how things may happen. But most of your conclusions must be based on what you read in the selection.

DISTINGUISHING BETWEEN FACT AND OPINION

Facts are statements that are based on direct evidence. They tell what really happened or what really is the case. Facts are known by actual experience or observation.

Opinions are statements of belief, judgment or feeling. They tell what the writer thinks about a subject.

Keeping Fact and Opinion Apart

** Look for words that interpret. In the first of the following sentences, we have details that describe facts - without any evaluation of these facts. In the second sentence, the writer interprets the details for us.

The man leaning against the fence had brown eyes and black hair touching his shoulders.

A handsome man leaned against the fence.

It's somebody's opinion that such a man is handsome. Other words that interpret- there are countless examples - are pretty, ugly, safe, dangerous, evil, attractive, well-dressed, good, and so on.

** Look for words that serve as clues to statements of some kind of opinion. Some words like probably, perhaps, usually, often, sometimes, on occasion are used to limit a statement of fact and to indicate the possibility of other opinions. Other words say clearly that opinion will follow; these are words like I believe, I think, in my opinion, I feel, I suggest.

** Before you accept a statement of fact and before you agree with a statement of opinion, question the skill of the author. Is he or she reliable? Why should you take his or her word?

** Test the writer's opinion by asking whether a different opinion is possible. You do not have to agree with the different opinion (or with the author's for that matter). You just have to be able to see if there is another view.

** Some authors give us statements from other writers or authorities in order to illustrate their own ideas. Make sure you can tell the source of any statement that appears in what you read.

APPENDIX

THE AUTHOR'S WORDS

Often there are words or phrases used by authors to guide your thinking along the pathways of their ideas. Mastering these will help you become a better reader. These "guides" will whisper directions in your ear:

("Here's more of what was already said")

also	too	in addition
and	further	besides
furthermore	moreover	

("It does what I just said, but it does this too")

likewise	at the same time	similarly
equally important		

("Just to be sure you understand, here's a specific example")

for example (e.g.)	as	like
such as	for instance	specifically

("Sometimes there is a choice; other times there isn't")

either/or	other than
neither/nor	otherwise

("So far I've only given one side of the issue; now I'll give the other side")

but	conversely	despite
however	on the other hand	though
nevertheless	in spite of	instead of
rather than	even though	notwithstanding
yet	regardless	whereas

("This has happened; now I'll tell you why")

then	thus	therefore
because	accordingly	so
consequently	hence	for this reason

("These are the conditions")

if	although	unless
providing	whenever	

("Okay, we agree on...")

granted that	of course	accepting this

("Watch Out - Take Notice")

indeed	above all	more important

("Let's keep things in order")

first	finally	next
then	last	second

("Let's keep up on <u>when</u> things take place")

afterwards	meanwhile	presently
before	subsequently	previously
formerly	ultimately	now

("Much has been said, so let's stop and pull things together")

in conclusion	in brief
for these reasons	to sum up

THE READING ASSIGNMENT

Instructors should use the following "guides" for giving the reading assignment. These are suggestions which should help set the purpose for the assignment and make it more successful for the students.

1. What is to be read?
2. What material(s) are to be used?
3. Why this assignment - How does it apply to previous learning and how will it apply to later learning.
4. What happens if this assignment is not read?
5. Amount of time alloted for assignment.
6. Type of reading needed to get most out of this particular lesson (skimming, scanning, main ideas).
7. Review technical vocabulary.
8. Alternatives? - (ability levels, interests, time, skills, experience, etc.)
9. What questions should students be able to answer after completing the reading assignment?

KEY QUESTION WORDS

The following list of key questions words defines and gives examples of the different tasks you may be asked to carry out on an essay examination. Make sure you know what to do to answer questions containing these different key question words.

agree, disagree, comment on, criticize, evaluate	Give your opinion about a book, quotation, or statement. If the question says agree or disagree, you must express either a positive or negative opinion. If the question says comment on, criticize, or evaluate, you can make both positive and negative points. "The first six weeks of a child's life are the most important period in its emotional development." Agree or disagree.
analyze	Break down a topic into all its parts. Be sure to include all the parts and to tell what makes each part different from the others. Analyze the corporate structure of the college bookstore.
compare	Show how two things are both alike and different. Be sure to discuss each thing and give both likenesses and differences. Compare the sculpture of Renaissance Italy to classical Greek sculpture.
contrast	Show only the differences between two things. Be sure to talk about each one. Contrast the nervous system of a flatword with the nervous system of a frog.
define	Give the exact meaning of a word, phrase, or concept. Show how the thing you are defining is different from everything else of its type. Give examples. Define Marx's concept of alienated labor.

explain why	Give the main reasons why an event mentioned happened or happens. Explain why ocean tides are not high at the same time every night and why they are not always the same height.
describe, discuss	Tell what happened, what the subject looks like, or what the subject is. Describe the conditions on the ships that brought slaves to America. Then discuss one rebellion that took place on the slave ship.
illustrate	Give one or more examples of a general statement. Be sure to relate each example to the general statement. Primitive tribes usually have rigid family systems. Illustrate this, using one of the tribes you studied this semester.
interpret	Explain the meaning of facts given in the exam question. The question may specify what method of interpretation you must use. Be sure to do more than just repeat the facts. In 1910, Farmtown, Kansas, had 502 farm workers, 37 other blue-collar workers, and 13 white-collar workers. In 1975, the same town had 153 farm workers, 289 blue-collar workers, and 86 white-collar workers. Interpret these statistics in light of national labor trends during this period.
justify, prove	Give reasons to show why a statement is true. The Industrial Revolution allowed some people to accumulate great wealth. Justify this statement, using material you studied this semester.
list, state	Make a list of important points. Be sure to include all the items asked for in the question. Do not give examples unless they are requested. List the five main methods of air-quality control studied this semester.

outline, review, summarize	Give all the main points of a quotation, book, or theory. You do not have to bother with unimportant points. Outline Galileo's major discoveries.
relate	Show how one subject has an effect on another. Be sure to show the connection between them. Relate the evolution of the horse to the changes in its environment.
trace, list the steps or stages	Give a series of important events, starting at one point and leading up to a final one. Be sure not to leave anything out or to include more than the question asks for. This type of exam question may refer to historical events, recall a process, or ask for detailed directions. Trace the events that led up to the Civil War.

ROOTS AND AFFIXES IN SCIENTIFIC/TECHNICAL WRITING

Roots and Affixes	Scientific Term	Roots and Affixes	Scientific Term
a (not, without)	achromatic aseptic asexual	ambi (both)	ambilateral
anim (life, mind, soul)	animal	ante (before)	anteorbital anterior
anthrop (man, human)	anthropoid	anti (against)	antibody anticatalyst antidote antiseptic
apo (off, away from)	apochromatic apogee	auto (self)	autopsy
bene (well, good)	beneficiate	bi (two)	biaxial bicentric biceps
bio (life)	biochemistry biology	cent (one hundred)	centipede centrifugal
chrom (color)	achromatic chromosome	chron (time)	chronometer synchronous
circum (around)	circulation circuit	co, con, com (with, together)	coagulate cohesive
contra (against, opposite)	contraorbital counterbalance	dem (people)	epidemic
dia (through, across)	diagram diagnosis	duc, duct (to lead)	conductor
epi (on, upon, over)	epidermic epicenter	eu (well, good)	eutrophy euthanasia
fac, fic (to do, to make)	infection	flect, flex (to bend)	deflection reflection
gamy (marriage)	agamic	gen (to produce, to beget)	progenitor
graph (to write)	electrocardiograph	hemi (half)	hemiplegia

ROOTS AND AFFIXES IN SCIENTIFIC/TECHNICAL WRITING

Roots and Affixes	Scientific Term	Roots and Affixes	Scientific Term
hetero (other, different)	heterosexual	hyper (ove)	hypertrophy hypertension
inter (among)	interpolar interplanetary	intra (inside)	intracellar
log, logy (word speech)	biology zoology	mal (bad, ill)	malnutrition
meter, metr (to measure)	barometer isometrics	mono (one)	mononuclear monosymmetric
multi, (much, many)	multicellular multiped	non (not)	nonconductor nonreactive
pan (all, every, universal)	panchromatic pangenesis	para (beside)	paragenesis paramorph
ped (foot)	biped quadruped	poly (much, many)	polychromatic
post (after)	postmortem	pre (before)	preclinical preaxial
pseudo (false)	pseudocare	retro (back-ward)	retrograde retrorocket
rupt (to break)	rupture eruption	scrib, script (to write)	prescription
semi (half, partly)	semiparasitic	spect (to look)	spectrograph
syn (together)	syndactyl	tact, tang (to touch)	contact contagious
tele (far off)	telescope	theo (good)	theomania
trans (across)	transference transfusion	ultra (beyond)	ultrasonic ultraviolet
uni (one)	unicellular unifoliate	val (to be, worth, to be strong)	bivalent bivalve
vert, vers (to turn)	converter diversiform		

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